

EXHIBIT 4

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
SHERMAN DIVISION**

INNOVATION SCIENCES, LLC,

Plaintiff,

v.

AMAZON.COM, INC., et al.

Defendant.

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**CASE NO. 4:18-cv-00474-ALM
(LEAD CASE)**

JURY TRIAL DEMANDED

DEFENDANTS' P.R. 3-3 INVALIDITY CONTENTIONS

Pursuant to the P.R. 3-3 and the Court's Scheduling Order (Dkt. No. 38) Defendants Amazon.com, Inc., Amazon Digital Services, Inc., Amazon Digital Services, LLC, Amazon Web Services, Inc., and Amazon Fulfillment Services, Inc. (collectively, "Amazon"), Resideo Technologies, Inc. ("Resideo"), HTC Corporation ("HTC"), and Vector Security, Inc. ("Vector") (collectively, "Defendants") provide the following Preliminary Invalidity Contentions to Plaintiff Virginia Innovation Sciences, Inc. / Innovation Sciences LLC (collectively, "VIS" or "Plaintiff") regarding the currently asserted claims of U.S. Patent Nos. 9,723,443 (the "'443 patent"), 9,729,918 (the "'918 patent"), 9,912,983 (the "'983 patent"), and 9,942,798 (the "'798 patent") (collectively, the "Asserted Patents").¹

The accompanying document productions required by Patent Local Rule 3-4(b) are also being provided contemporaneously with these Invalidity Contentions.

I. INTRODUCTION

Plaintiff has asserted the following claims against various Defendants: claims 22-

¹ Plaintiff only asserts claims of the '983 patent against Resideo and Vector. Plaintiff asserts claims of the '983, '912, and '798 patents against HTC. Plaintiff asserts claims of the '983, '912, '798, and '443 patents against Amazon.

29, 31-34, 36-39, 41-43, 45, 47, 49, 62-67, 71, 73-75, 77-82, 86-94, 97-112, 116-119, 121-128, 130-131, 133-135, 138-139, and 142-143 of the '983 Patent;¹ claims 9, 26-30, 33-40, 42-49, 51-60, 64-66, 68-75, 77-81, 84-92, 95-99, 111-128, and 131-136 of the '918 Patent; claims 1-6, 14-23, 28-30, 33-34, 38, 47, 49-52, 54, 56-60, 62-65, 81, and 98 of the '798 Patent; and claims 1, 3-7, 9, 11-12, 14-16, 26, 29-35, 38-41, 43-44, 46, and 49 of the '443 Patent (collectively, the "Asserted Claims").²

Defendants are providing Invalidity Contentions for only the above-identified Asserted Claims of the Asserted Patents, and each Defendant only should be considered to be providing contentions as to only those Asserted Claims presently identified as being asserted by Plaintiff pursuant to P.R. 3-1(a) for that Defendant. Should Plaintiff later attempt to assert additional claims against any Defendant(s) (including other Asserted Claims), Defendants each reserve the right to amend their Invalidity Contentions and contend that any additional claims are also invalid without limitation. Defendants' Invalidity Contentions are not an admission of validity as to any other claims of the Asserted Patents.

These preliminary contentions are based on Defendants' present understanding of the apparent interpretations of the Asserted Claims and claim constructions used in Plaintiff's Feb. 4, 2019 P.R. 3-1 Infringement Contentions,³ before any exchange of preliminary claim constructions by Plaintiff, and prior to any construction proceedings by the Court in these proceedings. Likewise, these Invalidity Contentions may reflect various alternative or conflicting positions as to claim construction and scope. Defendants do not adopt, advocate, or acquiesce in any particular claim construction position by these Invalidity Contentions. Nothing in Defendants' Preliminary Invalidity Contentions should be

² Plaintiff has not asserted all Asserted Claims of all Asserted Patents against all Defendants.

³ Feb. 7, 2019 for the Amazon Defendants.

regarded as necessarily reflecting the proper interpretation of the claims or an interpretation of the claims Defendants agree with or propose. Defendants dispute Plaintiff's apparent claim interpretations and propose alternative constructions. Furthermore, these Invalidity Contentions are not an admission by Defendants that any accused instrumentality, including any current or past versions of these instrumentalities, are covered by, or infringe the Asserted Claims, particularly when the Asserted Claims are properly construed.

Defendants' discovery and investigation in connection with this matter is continuing and thus, these Invalidity Contentions are based on information obtained to date and are necessarily preliminary in nature. In particular, these Invalidity Contentions are based in whole or in part on Defendants' present understanding of Plaintiff's positions concerning the alleged priority date(s) for Asserted Claims, the relevance of various portions of the specification(s) of Asserted Patents, and the scope and construction of the Asserted Claims to the extent those positions can be deduced from Plaintiff's P.R. 3-1 Infringement Contentions.

Defendants reserve the right to amend these contentions based on information learned in its continuing investigation, new developments in the case, or other circumstances. Defendants further reserve the right to seek to modify their P.R. 3-3 Invalidity Contentions in light of the discovery of additional relevant information.

The Court's Patent Rules and Docket Control Order contemplate that these Invalidity Contentions are prepared and served in response to Plaintiff's Infringement Contentions and production of documents pursuant to P.R. 3-2. However, Plaintiff's P.R. 3-1 Infringement Contentions and P.R. 3-2 document productions were insufficient because they lacked proper and complete disclosure as to how exactly Plaintiff contends that each Defendant allegedly infringes their respective Asserted Claims, including because Plaintiff merely copied and

pasted from publicly available materials without sufficient explanation regarding what Plaintiff contends actually meets particular limitations of the Asserted Claims. Further, Plaintiff's productions of documents pursuant to P.R. 3-2(a) and 3-2(b) did not include all materials believed to be in the possession, custody, or control of Plaintiff responsive to the specifically enumerated materials required to be produced under the rules.⁴

Due to Plaintiff's failures to timely provide proper and complete disclosure of its Infringement Contentions under P.R. 3-1 failures to timely produce documents in the categories of P.R. 3-2(a) and 3-2(b), and delays in providing relevant discovery (*e.g.*, despite requests for the same going back two months, many prior depositions of named inventors of Asserted Patents and patents and applications related thereto were not produced by Plaintiff until 5:35pm CDT on April 15—two days before these Invalidity Contentions were due), among other factors, Defendants reserve the right to seek leave from the Court to modify, supplement, and/or amend these Invalidity Contentions and associated document production based on further investigation, analysis, and discovery, results of patent reexaminations or *inter partes* reviews, Defendants' consultation with experts and others, and contentions or Court rulings (including rulings in related cases) on relevant issues such as claim construction, validity, purported conception and reduction to practice, proper naming of alleged inventors, and priority dates.

Defendants are continuing their search for and analysis of relevant prior art (including from third parties), Defendants reserve the right to seek to revise, amend, and/or supplement the information provided herein, including identifying, charting, and/or relying upon additional prior art references, relevant disclosures, actions, knowledge, prior

⁴ See, *e.g.*, Feb. 19, 2019 correspondence from B. Winterle to D. Jackson re deficiencies in Plaintiff's document productions, including under P.R. 3-2(a) and 3-2(b), along with follow-up correspondence on Feb. 21, 2019 and Feb. 28, 2019.

inventions, and other bases for invalidity contentions. Additional prior art, disclosures, actions, knowledge, prior inventions, and other invalidity defenses, whether or not cited in this disclosure and whether known or not known to Defendants, may become relevant as investigation, analysis, and discovery continue.

Further, despite interrogatories served by at least Vector requiring responses as to why Plaintiff contends certain prior art and combinations thereof do not anticipate or render obvious certain of the Asserted Claims, with responses due in January 2019, nearly three months before these Invalidity Contentions have been provided, Plaintiff has refused to provide such responsive discovery responses until after receipt thereof. Accordingly Defendants are currently unaware of how and to what extent, if any, Plaintiff will contend that any of the limitations of the Asserted Claims are not explicitly or inherently disclosed in the prior art previously or herein identified to Plaintiff by Defendants, or by any others who have previously challenged any of the Asserted Claims (or similar claims in related patents), whether in this Court, the Alexandria Court, the Federal Circuit, or in front of the Patent Trial and Appeals Board. Nor has Plaintiff specifically identified any alleged priority dates or dates of purported conception or reduction to practice earlier than the filing date or provisional applications of certain related patent applications, or evidence supporting any such earlier dates.

To the extent that Plaintiff subsequently makes or provides any such contentions regarding the purported lack of any prior art to disclose any claimed elements of the Asserted Claims, Defendants reserve the right to identify and rely upon other references, actions, knowledge, prior inventions, or portions of identified or unidentified references, combinations thereof, or other evidence related to prior art regarding the allegedly missing limitation(s).

Additionally, Plaintiff has failed thus far to timely produce numerous relevant materials relevant to Defendants' preparation of Invalidity Contentions (*e.g.*, sworn prior testimony of named inventors of Asserted Patents and other related patents and applications was produced at 5:35pm CDT only two days ago on April 15, 2019), and third-party discovery has not yet been received. Accordingly, Defendants reserve the right to present additional prior art references, actions, knowledge, prior inventions, and/or disclosures under pre-AIA 35 U.S.C. §§ 102(a), (b), (e), (f), and/or (g), and/or § 103, located during the course of such discovery or further investigation, and to amend, and/or supplement these Invalidity Contentions should Plaintiff be allowed by the Court to correct, clarify, amend, and/or supplement their Infringement Contentions, or their inherent claim constructions, or following the Court's claim construction.

Defendants also hereby incorporate all prior art references, actions, charts, and disclosures served on Plaintiff in any prior or pending court action or proceeding before the Patent Trial and Appeal Board involving any of the Asserted Patents.

II. P.R. 3-3(A) – IDENTIFICATION OF PRIOR ART

Defendants identify all of the references cited on the face of the Asserted Patents, the admitted prior art references in the Asserted Patents' specifications, the prosecution histories of the Asserted Patents, and the references and combinations thereof cited in any reexaminations or *inter partes* review ("IPR") proceedings, all of which are incorporated herein by reference. Defendants further identify the references and combinations thereof cited in any invalidity contentions and motions for summary judgment in earlier or subsequent actions or proceedings involving any of the Asserted Patents or patents related thereto (including the Motion to Dismiss filed by Amazon.com, Inc. in *Virginia Innovation Sciences, Inc. v. Amazon.com, Inc.*, No. 1:16-CV-00861, Dkt. No. 2, which is incorporated

herein by reference), the instituted inter partes reviews in Case Nos. IPR2017-00870, IPR2017-00871, IPR2017-00872, IPR2017-00873, IPR2017-00874, IPR2017-00875, IPR2017-00876, IPR2017-00877, IPR2017-00878, and IPR2017-00879, and the expert disclosures and opinions of David B. Johnson in his Expert Report on Invalidity and in his Report on Non-infringement and Supplement Report on Invalidity (which are also incorporated herein by reference) in *Virginia Innovation Sciences, Inc. v. Amazon.com, Inc.*, No. 1:16-CV-00861.

Defendants further identify the prior art listed in the Defendants' claim charts for the Asserted Patents submitted herewith, as well as the art identified in this cover pleading.

Defendants contend that at least some of the systems, services, and products disclosed in one or more of the prior art references identified in Exhibit 1 are prior art under 35 U.S.C. §§ 102(a), (b), (e), and/or (g), and/or § 103. Defendants may have incomplete information regarding the dates by which some of the products described in the prior art references were known, publicly disclosed, used, sold, or offered for sale, the circumstances under which the research, design, or development activities were conducted, and the identities of the particular individuals involved in such activities through publicly available patents, publications, and product literature. Defendants anticipate that the actual dates, circumstances, and identities of individuals will be the subject of third-party discovery during these proceedings.

To the extent the inventions identified in the patents, publications, systems, and other prior art to the Asserted Patents identified in these Invalidity Contentions were conceived by another and diligently reduced to practice before the alleged conception and reduction to practice of the Asserted Claims of the Asserted Patents by the named inventors of those patents, Defendants allege that such prior art inventions invalidate the

Asserted Patents under pre-AIA 35 U.S.C § 102(g)(2), among other bases.

The following list provides the identity of each item of prior art, patent, or publication, that anticipates each Asserted Claim of the respective Asserted Patent or renders it obvious.

A. Prior Art Patents

1. '983 Patent:

Patent Number	Country of Origin	Date of Issue or Publication	Short Cite
6,512,771	U.S.	1/28/2003	Atarashi
7,562,379	U.S.	7/14/2009	Hardacker '379
6,567,981	U.S.	5/20/2003	Jeffrey
6,204,763	U.S.	3/20/2001	Sone
7,258,276	U.S.	8/21/2007	Linton
5,381,462	U.S.	1/19/1995	Larson
5,438,607	U.S.	8/1/1995	Przygoda
5,748,083	U.S.	5/5/1998	Reitkerk
5,861,804	U.S.	1/19/1999	Fansa
6,496,862	U.S.	12/17/2002	Akatsu
6,545,601	U.S.	4/8/2003	Monroe
6,792,323	U.S.	9/14/2004	Krzyzanowski
6,725,281	U.S.	4/20/2004	Zintel
6,828,909	U.S.	12/7/2004	Script
6,960,998	U.S.	11/1/2005	Menard
6,970,183	U.S.	11/29/2005	Monroe
6,975,220	U.S.	12/13/2005	Foodman
7,136,709	U.S.	11/14/2006	Arling '709
7,373,395	U.S.	5/13/2008	Brailean
7,480,484	U.S.	1/20/2009	Nam
5,164,979	U.S.	11/17/1992	Choi
7,113,090	U.S.	9/26/2006	Saylor
6,781,635	U.S.	8/24/2011	Takeda
7,920,623	U.S.	4/5/2011	Stone
6,663,420	U.S.	12/16/2003	Xiao
7,020,121	U.S.	3/28/2006	Hardacker '121
7,295,608	U.S.	11/13/2007	Reynolds
10-2004-0004307	South Korea	1/13/2004	Yoo

2. '918 Patent:

Patent Number	Country of Origin	Date of Issue or Publication	Short Cite
7,136,709	U.S.	11/14/2006	Arling '709
7,373,395	U.S.	5/13/2008	Brailean
7,480,484	U.S.	1/20/2009	Nam
5,164,979	U.S.	11/17/1992	Choi
7,113,090	U.S.	9/26/2006	Saylor
6,781,635	U.S.	8/24/2011	Takeda
7,920,623	U.S.	4/5/2011	Stone
6,663,420	U.S.	12/16/2003	Xiao
7,020,121	U.S.	3/28/2006	Hardacker '121
7,295,608	U.S.	11/13/2007	Reynolds
10-2004-0004307	South Korea	1/13/2004	Yoo
6,792,323	U.S.	9/14/2004	Krzyzanowski
6,725,281	U.S.	4/20/2004	Zintel
6,496,862	U.S.	12/17/2002	Akatsu
6,204,763	U.S.	3/20/2001	Sone
5,381,462	U.S.	1/19/1995	Larson

3. '798 Patent:

Patent Number	Country of Origin	Date of Issue or Publication	Short Cite
7,136,709	U.S.	11/14/2006	Arling '709
7,373,395	U.S.	5/13/2008	Brailean
7,480,484	U.S.	1/20/2009	Nam
5,164,979	U.S.	11/17/1992	Choi
7,113,090	U.S.	9/26/2006	Saylor
6,781,635	U.S.	8/24/2011	Takeda
7,920,623	U.S.	4/5/2011	Stone
6,663,420	U.S.	12/16/2003	Xiao
7,020,121	U.S.	3/28/2006	Hardacker '121
7,295,608	U.S.	11/13/2007	Reynolds
10-2004-0004307	South Korea	1/13/2004	Yoo
6,792,323	U.S.	9/14/2004	Krzyzanowski
6,725,281	U.S.	4/20/2004	Zintel
6,496,862	U.S.	12/17/2002	Akatsu
6,204,763	U.S.	3/20/2001	Sone

4. '443 Patent:

Patent Number	Country of Origin	Date of Issue or Publication	Short Cite
7,258,276	U.S.	8/21/2007	Linton

B. Prior Art Publications**1. '983 Patent:**

Title	Date of Publication	Author/Publisher	Short Cite
US2004/0260669	1/23/2004	Dennis Fernandez	Fernandez
US2003/0226149	12/4/2003	Kyong-Joon Chun et al.	Chun
US2005/0175099	8/11/2005	Juha Sarkijarvi	Sarkijarvi
WO 03/079645	9/25/2003	Larry R. Fischer	Fischer
US2008/0148063	6/19/2008	James G. Hanko et al.	Hanko
WO 02/061706	8/8/2002	Michael Heaton et al.	Heaton
US2002/0157112	10/24/2002	Peter Kuhn	Kuhn
US2004/0100380	5/27/2004	Jeff Lindsay et al.	Lindsay
US2002/0116492	8/22/2002	Marc Van Oldenborgh	Oldenborgh
US2003/0225568	12/4/2003	Daniel R. Salmonsens	Salmonsens
WO 98/48487	10/29/1998	Harold Shannon et al.	Shannon
US2002/0194596	12/19/2002	Gopal K. Srivastava	Srivastava
US2004/0255326	12/16/2004	John Alson Hicks III	Hicks
US2005/0235329	10/20/2005	Jeyhan Karaoguz	Karaoguz
JP2003085248	3/20/2003	Aki Kariya et al.	Kariya
US2008/0282299	11/13/2008	Peter Koat	Koat
US2006/0080707	4/13/2006	Indra Laksono	Laksono
WO 2004/036521	4/29/2004	Christopher B. Marshall et al.	Marshall
US2002/0013818	1/31/2002	Yoko Yamaga	Yamaga
US2004/0243517	12/2/2004	Thomas J. Hansen	Hansen
US2008/0132859	6/5/2008	Harold George Pires	Pires
US2002/0164999	11/7/2002	William J. Johnson	Johnson
US2002/0184112	12/5/2002	Tatsuji Nagaoka et al.	Nagaoka
US2004/0024851	2/5/2004	Surendra Naidoo, et al.	Naidoo
US2004/0150718	8/5/2004	Jian Zhang, et al.	Zhang
US2006/0022816	2/2/2006	Mitsuhiko Yukawa	Yukawa
Honeywell Security & Custom Electronics Sourcebook 2006	April 2006	Honeywell designed, developed, invented, made, used, distributed knowledge about, advertised, published, and also offered for sale and/or	Sourcebook

		sold to its customers this system via at least its website and public press articles, as evidenced at least by the documents identified herein and/or produced pursuant to P.R. 3-4(b).	
US2004/0223614	11/11/2004	Philip J. Seaman	Seaman
US2003/0128197	7/10/2003	Steven Turner, <i>et al.</i>	Turner
EP 1 175 069 A1	1/23/2002	Fernando M. Matsubara, <i>et al.</i>	Matsubara
EP 0 999 678 A2	5/10/2000	Edward Horowitz	Horowitz
US2003/0229900	12/11/2003	Richard Reisman	Reisman
Intel Technology Journal, Vol. 6, Issue 4 ISSN 1535-766X (Nov. 15, 2002)	11/15/2002	Intel Corporation	Intel Technology Journal
U.S. Prov. Pat. Appl. No. 60/517,237	5/6/2005	Paul D. Arling, <i>et al.</i>	Arling '237
US 2002/0058530	5/16/2002	Katsuaki Akama	Akama
DLNA Networked Device Interoperability Guidelines, expanded March 2006 (INNOV00091875 - 0092492)	March 2006	Digital Living Network Alliance	"DLNA 2006"
www.alarm.com website prior to August 10, 2005	Prior to August 10, 2006	Alarm.com	Prior Art Alarm.com System ("PAAS")

2. '918 Patent:

Title	Date of Publication	Author/Publisher	Short Cite
US2004/0024851	2/5/2004	Surendra Naidoo, et al.	Naidoo
US2004/0150718	8/5/2004	Jian Zhang, et al.	Zhang
US2004/0223614	11/11/2004	Philip J. Seaman	Seaman
US2003/0128197	7/10/2003	Steven Turner, <i>et al.</i>	Turner
EP 1 175 069 A1	1/23/2002	Fernando M. Matsubara, <i>et al.</i>	Matsubara
EP 0 999 678 A2	5/10/2000	Edward Horowitz	Horowitz
US2003/0229900	12/11/2003	Richard Reisman	Reisman
Intel Technology Journal, Vol. 6, Issue 4	11/15/2002	Intel Corporation	Intel Technology Journal

ISSN 1535-766X (Nov. 15, 2002)			
U.S. Prov. Pat. Appl. No. 60/517,237	5/6/2005	Paul D. Arling, <i>et al.</i>	Arling '237
US 2002/0058530	5/16/2002	Katsuaki Akama	Akama
2002/0116492	8/22/2002	Marc Van Oldenborgh	Oldenborgh
2002/0013818	1/31/2002	Yoko Yamaga	Yamaga
2006/0080707	4/13/2006	Indra Laksono	Laksono
WO 2004/036521	4/29/2004	Christopher B. Marshall et al.	Marshall
2002/0164999	11/7/2002	William J. Johnson	Johnson
2002/0184112	12/5/2002	Tatsuji Nagaoka et al.	Nagaoka
2004/0255326	12/16/2004	John Alson Hicks III	Hicks
2005/0235329	10/20/2005	Jeyhan Karaoguz	Karaoguz
JP2003085248	3/20/2003	Aki Kariya et al.	Kariya
2008/0282299	11/13/2008	Peter Koat	Koat

3. '798 Patent:

Title	Date of Publication	Author/Publisher	Short Cite
US2004/0024851	2/5/2004	Surendra Naidoo, et al.	Naidoo
US2004/0150718	8/5/2004	Jian Zhang, et al.	Zhang
US2004/0223614	11/11/2004	Philip J. Seaman	Seaman
US2003/0128197	7/10/2003	Steven Turner, <i>et al.</i>	Turner
EP 1 175 069 A1	1/23/2002	Fernando M. Matsubara, <i>et al.</i>	Matsubara
EP 0 999 678 A2	5/10/2000	Edward Horowitz	Horowitz
US2003/0229900	12/11/2003	Richard Reisman	Reisman
Intel Technology Journal, Vol. 6, Issue 4 ISSN 1535-766X (Nov. 15, 2002)	11/15/2002	Intel Corporation	Intel Technology Journal
U.S. Prov. Pat. Appl. No. 60/517,237	5/6/2005	Paul D. Arling, <i>et al.</i>	Arling '237
US 2002/0058530	5/16/2002	Katsuaki Akama	Akama
2006/0080707	4/13/2006	Indra Laksono	Laksono
2008/0282299	11/13/2008	Peter Koat	Koat
2004/0255326	12/16/2004	John Alson Hicks III	Hicks
2005/0235329	10/20/2005	Jeyhan Karaoguz	Karaoguz

4. '443 Patent:

Title	Date of Publication	Author/Publisher	Short Cite
2004/0243517	12/2/2004	Thomas J. Hansen	Hansen
2008/0132859	6/5/2008	Harold George Pires	Pires

C. Prior Art Systems/Services/Prods./Inventions/Offeres/Sales/Uses/Knowledge

1. '983 Patent

System/Service	Relevant Dates	Persons/Entities Involved in Prior Use, Sale, and/or Offers for Sale	Short Cite
HomeMinder	At least as early as 1985	General Electric designed, developed, invented, made, used, distributed knowledge about, advertised, published, and also offered for sale and/or sold to its customers this system via at least its website and public press articles, as evidenced at least by the documents identified herein and/or produced pursuant to P.R. 3-4(b).	HomeMinder
Smart Home	At least as early as 1999	Microsoft designed, developed, invented, made, used, distributed knowledge about, advertised, published, and also offered for sale and/or sold to its customers this system via at least its website and public press articles, as evidenced at least by the documents identified herein and/or produced pursuant to P.R. 3-4(b).	Microsoft
DirecTV HD Receiver	At least as early as 2003	Samsung designed, developed, invented, made, used, distributed knowledge about,	Samsung

System/Service	Relevant Dates	Persons/Entities Involved in Prior Use, Sale, and/or Offers for Sale	Short Cite
		advertised, published, and also offered for sale and/or sold to its customers this system via at least its website and public press articles, as evidenced at least by the documents identified herein and/or produced pursuant to P.R. 3-4(b).	
ADEMCO Optiflex Video Controller using Symphony	At least as early as November 2004	Honeywell designed, developed, invented, made, used, distributed knowledge about, advertised, published, and also offered for sale and/or sold to its customers this system via at least its website and public press articles, as evidenced at least by the documents identified herein and/or produced pursuant to P.R. 3-4(b).	Optiflex
Honeywell 8142-I Symphony Advanced User Interface	At least as early as December 2002	Honeywell designed, developed, invented, made, used, distributed knowledge about, advertised, published, and also offered for sale and/or sold to its customers this system via at least its website and public press articles, as evidenced at least by the documents identified herein and/or produced pursuant to P.R. 3-4(b).	Symphony
Honeywell LYNXR-EN System	At least as early as May 2004	Honeywell designed, developed, invented, made, used, distributed knowledge about, advertised, published, and also offered for sale and/or	LYNXR-EN

System/Service	Relevant Dates	Persons/Entities Involved in Prior Use, Sale, and/or Offers for Sale	Short Cite
		sold to its customers this system via at least its website and public press articles, as evidenced at least by the documents identified herein and/or produced pursuant to P.R. 3-4(b).	
Honeywell LYNXR-I System	At least as early as March 2006	Honeywell designed, developed, invented, made, used, distributed knowledge about, advertised, published, and also offered for sale and/or sold to its customers this system via at least its website and public press articles, as evidenced at least by the documents identified herein and/or produced pursuant to P.R. 3-4(b).	LYNXR-I
Honeywell Security & Custom Electronics Sourcebook 2006	April 2006	Honeywell designed, developed, invented, made, used, distributed knowledge about, advertised, published, and also offered for sale and/or sold to its customers this system via at least its website and public press articles, as evidenced at least by the documents identified herein and/or produced pursuant to P.R. 3-4(b).	Sourcebook
Honeywell VISTA-128BP Series Security System	At least as early as June 2004	Honeywell designed, developed, invented, made, used, distributed knowledge about, advertised, published, and also offered for sale and/or sold to its customers this system via at least its	VISTA-128BP

System/Service	Relevant Dates	Persons/Entities Involved in Prior Use, Sale, and/or Offers for Sale	Short Cite
		website and public press articles, as evidenced at least by the documents identified herein and/or produced pursuant to P.R. 3-4(b).	
Prior Art Alarm.com System	At least as early as August 9, 2005	Alarm.com Inc., alone or in combination with GE Security, designed, developed, invented, made, used, distributed knowledge about, advertised, published, and also offered for sale (along with Alarm.com Solution Providers and Alarm.com Authorized Dealers such as Stop Alarm Systems of Memphis, TN) and/or sold this system via at least their websites and public press articles, as evidenced at least by the documents identified herein and/or produced pursuant to P.R. 3-4(b), described in a printed publication (<i>e.g.</i> , Alarm.com's website available prior to August 10, 2005, and installation (or other types of) instructions, user guides, online materials, technical support, and other materials available from one or more of GE Security, Alarm.com, or Alarm.com Solution Providers or Alarm.com Authorized Dealers), patented (<i>e.g.</i> , U.S. Pat. Nos. 6,661,340; 6,400,265; and/or 7,113,090 to Saylor, <i>et</i>	PAAS

System/Service	Relevant Dates	Persons/Entities Involved in Prior Use, Sale, and/or Offers for Sale	Short Cite
		<i>al.</i>), and/or otherwise made known in the U.S. (<i>e.g.</i> , by alarm dealers, customers of Alarm.com, readers of the Alarm.com website, alarm installers, etc.) prior to August 10, 2005.	
HAL 2000 System w/ HAL Digital Music Center HAL 2000 System w/ HAL Digital Video Center	At least as early as 2002 At least as early as 2005	Home Automated Living, Inc. designed, developed, invented, made, used, distributed knowledge about, advertised, published, and also offered for sale and/or sold to its customers this system via at least its website public press articles, manuals, and help files as evidenced at least by the documents identified herein and/or produced pursuant to P.R. 3-4(b).	HAL
Applicant Admitted Prior Art	At least as early August 9, 2006		AAPA

2. '918 Patent

System/Service	Relevant Dates	Persons/Entities Involved in Prior Use, Sale, and/or Offers for Sale	Short Cite
HAL 2000 System w/ HAL Digital Music Center HAL 2000 System w/ HAL Digital Video Center	At least as early as 2002 At least as early as 2005	Home Automated Living, Inc. designed, developed, invented, made, used, distributed knowledge about, advertised, published, and also offered for sale and/or sold to its customers this system via at least its website public press articles, manuals,	HAL

		and help files as evidenced at least by the documents identified herein and/or produced pursuant to P.R. 3-4(b).	
HomeMinder	At least as early as 1985	General Electric designed, developed, invented, made, used, distributed knowledge about, advertised, published, and also offered for sale and/or sold to its customers this system via at least its website and public press articles, as evidenced at least by the documents identified herein and/or produced pursuant to P.R. 3-4(b).	HomeMinder
Smart Home	At least as early as 1999	Microsoft designed, developed, invented, made, used, distributed knowledge about, advertised, published, and also offered for sale and/or sold to its customers this system via at least its website and public press articles, as evidenced at least by the documents identified herein and/or produced pursuant to P.R. 3-4(b).	Microsoft
DirecTV HD Receiver	At least as early as 2003	Samsung designed, developed, invented, made, used, distributed knowledge about, advertised, published, and also offered for sale and/or sold to its customers this system via at least its website and public press articles, as evidenced at least by the documents identified herein and/or produced pursuant to P.R. 3-4(b).	Samsung

3. '798 Patent

System/Service	Relevant Dates	Persons/Entities Involved in Prior Use, Sale, and/or Offers for Sale	Short Cite
<p>HAL 2000 System w/ HAL Digital Music Center</p> <p>HAL 2000 System w/ HAL Digital Video Center</p>	<p>At least as early as 2002</p> <p>At least as early as 2005</p>	Home Automated Living, Inc. designed, developed, invented, made, used, distributed knowledge about, advertised, published, and also offered for sale and/or sold to its customers this system via at least its website public press articles, manuals, and help files as evidenced at least by the documents identified herein and/or produced pursuant to P.R. 3-4(b).	HAL
HomeMinder	At least as early as 1985	General Electric designed, developed, invented, made, used, distributed knowledge about, advertised, published, and also offered for sale and/or sold to its customers this system via at least its website and public press articles, as evidenced at least by the documents identified herein and/or produced pursuant to P.R. 3-4(b).	HomeMinder
Smart Home	At least as early as 1999	Microsoft designed, developed, invented, made, used, distributed knowledge about, advertised, published, and also offered for sale and/or sold to its customers this system via at least its website and public press articles, as evidenced at least by the documents identified herein and/or produced pursuant to	Microsoft

		P.R. 3-4(b).	
DirecTV HD Receiver	At least as early as 2003	Samsung designed, developed, invented, made, used, distributed knowledge about, advertised, published, and also offered for sale and/or sold to its customers this system via at least its website and public press articles, as evidenced at least by the documents identified herein and/or produced pursuant to P.R. 3-4(b).	Samsung

III. Invalidity Under Pre-AIA § 102(f)

The asserted claims of the '443 patent are invalid under pre-AIA 35 U.S.C. § 102(f). On information and belief, Tiehong (Ann) Wang (a/k/a Anne Wong), the first named inventor of the '443 patent, derived the Asserted Claims therein from Amazon. In particular, the claims, as asserted, were not filed with the U.S. Patent and Trademark Office until May 19, 2017. On information and belief, the claimed invention was derived from Amazon products, including the accused Dash Replenishment service.

IV. STATEMENT OF PRIORITY DATE

Plaintiff contends under P.R. 3-1(f) that all Asserted Claims within the '983 Patent "entitled to a priority date not later than August 10, 2006" and that the claimed technology is described in a provisional application filed February 2, 2007. Plaintiff does not contend that, under P.R. 3-1 (e), "any patent that claims priority to an earlier application" and has stated no "priority date to which each asserted claim allegedly is entitled" with respect to the '798, '918, or '443 Patents.

Despite at least Vector Security Inc. having sought via interrogatories served in December 2018 the Plaintiff's positions regarding where within the priority patent

applications there exists alleged support for Plaintiff's contentions of any applicable earlier priority dates for the '983 Patent (*i.e.*, dates pre-dating the actual filing dates of the respective application actually containing the Asserted Claims of the '983 Patent as issued), Plaintiff has thus far refused to provide any such responsive information before these Invalidity Contentions are served.

However, in light of the declaration provided by one of the named inventors of all Asserted Patents, Ms. Anne Wong, on November 29, 2018 (*see* Dkt. 21 in Case No. 4:18-cv-00477-ALM, "Wong Declaration" at ¶14) regarding which portions of the specification the Asserted Claims do and do not "rel[y] by," Ms. Wong (also Plaintiff's CEO, and thus these statements are a party admission) testified that "The specification disclosure relied by asserted claims of '983 [patent] in current case [against Defendants] is not in '492 patents [*sic*]." (¶ 14). Therefore, all overlapping portions between the specification of U.S. Pat. No. 7,899,492 and the asserted '983 Patent's specification have been disclaimed by Plaintiff for purposes of providing any type of written description, enablement, or other support for any Asserted Claims of the '983 Patent, and can no longer be relied upon by Plaintiff to either (i) argue against any contentions by Defendants that Asserted Claims of the '983 Patent lack of written description support or not enabled under § 112, or (ii) provide support for any priority date earlier than the filing date of the '983 Patent's application.

As further described below, there are claimed elements in the Asserted Claims of the '983 Patent that do not have written description support and are not enabled within the remaining portions of the '983 Patent's specification that Plaintiff's CEO did not disclaim in her November 2018 testimony and that also, as contended by Plaintiff, allegedly date back to an application filed on August 10, 2006, and a provisional application filed February 2, 2007. Accordingly, in light of at least Ms. Wong's November 2018 sworn testimony, Plaintiff has

no good faith basis to rely upon the August 10, 2006 priority date for many Asserted Claims in the '983 Patent.

Defendants reserve their rights to update their own contentions as to the appropriate priority date of each Asserted Claim, and/or to identify additional prior art or combinations thereof to address priority date(s) earlier than those of the applications for patents containing the Asserted Claims.

With respect to the '983 Patent, in light of Ms. Wong's sworn November 29, 2018 testimony, Defendants believe that at least any of the Asserted Claims in the '983 Patent containing the term "a decoder" cannot claim priority back to August 10, 2006 (or any earlier filed applications).⁵

Thus, in the event that any Asserted Claim of the '983 Patent is otherwise found to be definite, enabled, and have sufficient written description, in light of Plaintiff's improper reliance upon non-provisional U.S. application Ser. No. 11/501,747 for support for Asserted Claims in the '983 Patent, and this Court's Orders Governing Proceedings at Section H ("A party that fails to disclose any information required to be disclosed by any order of this court or the Patent Rules of this court will not, unless such failure is harmless, be permitted to use such evidence at trial, hearing or in support of a motion."), Plaintiff shall be precluded from relying upon priority date for any Asserted Claim of the '983 Patent earlier than the filing date of the '983 Patent, which is June 19, 2017.

V. P.R. 3-3(B)-(C) – CLAIM CHARTS; ANTICIPATION AND OBVIOUSNESS

Above, Defendants have identified certain prior art references, knowledge,

⁵ To the extent that Plaintiff continues to contend that any Asserted Claims of the '983 Patent are entitled to any priority date earlier than the filing date of the application for the '983 Patent, Defendants contend under P.R. 3-3(d) that each Asserted Claim containing any of these bulleted terms is invalid under 35 U.S.C. § 112, as it is unsupported by an adequate written description and is also not enabled.

inventions, and activities that anticipate the Asserted Claims of Asserted Patents under at least 35 U.S.C. §§ 102(a), (b), (e), and/or (g), either expressly or inherently. In the attached Exhibit 1, Defendants have identified certain prior art references, knowledge, inventions, and activities that, alone when combined with the knowledge of a person of ordinary skill in the art, and/or when combined with one or more other listed items of prior art, render obvious the Asserted Claims under 35 U.S.C. § 103.

Exemplary citations to and disclosures in and about certain prior art references, knowledge, inventions, and activities are shown in the Prior Art Invalidity Charts Pursuant to P.R. 3-3(c) in Exhibits A – M M M . Persons having ordinary skill in the art may view the prior art references generally in the context of other publications, literature, products, knowledge, and understanding. The citations are exemplary and the references or other evidence may contain additional relevant disclosures.

Defendants reserve the right to rely on uncited portions of the prior art references or evidence and on other publications and expert testimony as aids in understanding and interpreting the cited portions, as providing context thereto, and as additional evidence that claim limitations were known, present, or disclosed. The citations may be evidence of express or inherent disclosure in the reference. Where Defendants cite to a particular figure in a reference or evidence, the citation should be understood to encompass the caption and description of the figure and any text relating to the figure. Where Defendants cite to particular text referring to a figure, the citation should be understood to include the figure as well. Defendants further reserve the right to rely on uncited portions of the prior art references, other publications, testimony, and other evidence to establish bases for combinations of certain prior art that render the Asserted Claims obvious. Further, for any combination, Defendants reserve the right to rely additionally on information generally

known to those skilled in the art and/or common sense.

Where an individual reference, action, knowledge, and/or prior invention is cited with respect to all elements of an Asserted Claim, Defendants contend that the reference, action, knowledge, and/or prior invention anticipates the claim under 35 U.S.C. §§ 102(a), (b), (e), and/or (g) and also renders the claim obvious under 35 U.S.C. § 103, both by itself in view of the knowledge of a person of ordinary skill in the art and in combination with other references, actions, knowledge, and/or prior inventions to the extent the reference, action, knowledge, and/or prior invention is not found to disclose one or more claim elements.

Where an individual reference, action, knowledge, and/or prior invention is cited with respect to fewer than all elements of an Asserted Claim or is not found to disclose one or more elements of an Asserted Claim, Defendants contend that the reference, action, knowledge, and/or prior invention renders the claim obvious under 35 U.S.C. § 103(a) in view of each other reference, action, knowledge, and/or prior invention and combination thereof that discloses the remaining claim element(s), as indicated in the claim charts submitted herewith. Exemplary motivations to combine references, actions, knowledge, and/or prior inventions are discussed below.

Defendants further reserve the right to assert that the Asserted Claims are invalid under pre-AIA 35 U.S.C § 102(f) in the event that Defendants obtain evidence that one or more of the named inventors of the Asserted Patents did not invent (either alone or in conjunction with others) the subject matter recited in the Asserted Claims. Should Defendants obtain such evidence, they will provide the name of the person(s) from whom and the circumstances under which the alleged invention or any part of it was derived.

Defendants further intend to rely on named inventor admissions concerning the scope

of the Asserted Claims or of the prior art relevant to the Asserted Claims found in, *inter alia*, the patent prosecution history for the Asserted Patents and related patents and/or patent applications, any deposition or other testimony of the named inventors of the Asserted Patents (or patents or applications related thereto, a vast majority of which have yet to be produced by Plaintiff in these proceedings), and the papers that Plaintiff or its alleged expert serves or files, and any evidence that it submits in conjunction with this litigation, any related cases, proceedings with the PTO or previous litigations involving the Asserted Patents or patents related thereto.

Defendants note that as of the date of these Invalidity Contentions, and despite repeated requests for Plaintiff to provide the same over the past two months, Plaintiff did not produce much of the prior sworn testimony in its possession, custody, and control of named inventors on related applications and patents in the same family as the Asserted Patents (including Anne Wong, Ronald Wang, Ximing Wang, and William Halal) until after 5:00 PM on April 15, 2019 (*i.e.*, two days ago). To the extent any information is identified that is or becomes relevant to the invalidity of any Asserted Claims under pre-AIA § 102(f), Defendants reserve the right to contend that any of the Asserted Claims are invalid for failure to name the correct inventors, and/or to contend that Plaintiff lacks standing to bring these proceedings with respect to such Asserted Patents.

Many of the cited references identify or relate to additional references and/or products, services, projects, actions, knowledge, and/or prior inventions. Many of the cited references also identify software or hardware. Defendants intend to rely upon such additional references and copies or exemplars of such software or hardware as appropriate. Defendants will produce or make available for inspection any such references, software, or hardware that it intends to rely upon. To the extent such software or hardware is not in Defendants'

possession, custody, or control, Defendants intend to seek third party discovery as appropriate to get such software or hardware and will produce it at that time.

Defendants also may rely upon the disclosures of the references, actions, knowledge, and/or prior inventions cited and/or discussed during the prosecution of the Asserted Patents, reexaminations, and IPRs, and/or the assertions presented regarding any such references.

Defendants also may rely upon the disclosures, and express or implicit admissions, in the Asserted Patents and any applications, to which the Asserted Patents purport to claim priority, as to features and functionality that were known in the prior art, e.g., the Applicant Admitted Prior Art, as well as any disclosures incorporated by reference to any of these applications or patents.

Defendants may rely on additional evidence, citations, references, expert testimony, and other material to provide context or to aid in understanding the cited portions of the references, evidence, inherent disclosures, and/or cited features of the prior art. Defendants also may rely on expert testimony explaining relevant portions of references, evidence, inherent disclosures, relevant hardware or software products or systems, and other discovery regarding these subject matters.

Furthermore, nothing in these Invalidity Contentions shall be treated as an admission or suggestion that Plaintiff's apparent construction of claim terms is appropriate or that any of Defendants' accused instrumentalities meets any limitation of any Asserted Claim. Defendants deny that any Asserted Claim is valid, and also deny they infringe any Asserted Claim of the Asserted Patents.

The combinations of references provided above, in Exhibit 1 and in the accompanying Prior Art Reference Charts in Exhibits A-MMM are exemplary and are not intended to be exhaustive. Additional obviousness combinations of the references identified

herein are possible, and Defendants reserve the right to use any such combination(s) in this litigation. In particular, Defendants are currently unaware of Plaintiff's allegations with respect to the level of skill in the art and the qualifications of the typical person of ordinary skill in the art. Defendants are also unaware of the extent, if any, to which Plaintiff may contend that limitations of the claims at issue are not disclosed in the prior art identified by Defendants as anticipatory, and the extent to which Plaintiff will contend that elements not disclosed in the asserted patent specification would have been known to persons of skill in the art. Defendants reserve the right to supplement these contentions to identify other references that would have made such limitations obvious in view of the relevant disclosures.

A. Invalidity Charts

Defendants have provided the accompanying Prior Art Invalidity Charts pursuant to P.R. 3-3(c) in Exhibits A - M M M . Individual invalidity charts illustrate where each element of each Asserted Claim can be found in each item of the listed prior art (expressly or inherently), including for each element that Defendants contend is governed by 35 U.S.C. § 112, ¶ 6, the identity of the structure(s), act(s), or material(s) in each item of prior art that performs the claimed function.

Where Defendants cite to a particular figure in a prior art reference, the citation should be understood to encompass the caption and description of the figure, and any text relating to the figure in addition to the figure itself. Conversely, where a cited portion of text refers to a figure, the citation should be understood to include the figure as well. These charts also show exemplary combinations with other prior art. For all of the reasons stated above and herein, Defendants reserve the right to supplement the invalidity charts as appropriate.

To the extent that the Court or another tribunal finds that a prior art reference, action,

knowledge, and/or prior invention does not expressly disclose certain limitations in the Asserted Claims, Defendants contend such limitations would have been inherent and/or obvious. By mapping the claim language of the Asserted Claims to the prior art, Defendants do not imply or admit that the claim language satisfies 35 U.S.C. § 112 (including that claim terms are supported by written description or are not indefinite) or that the claim language has patentable weight.

Defendants note that in the accompanying Exhibits A-MMM they have applied the prior art in accordance with Plaintiff's improper assertions of infringement and improper applications of the Asserted Claims. Defendants do not agree with Plaintiff's application of the Asserted Claims. Citations from the identified prior art or evidence thereof are not a ratification or acceptance of the manner in which Plaintiff applies particular claim elements to the features and functions of the Accused Instrumentalities (if at all). The citations are instead intended to demonstrate and provide notice that, if certain claim elements are applied against the prior art in the same manner as Plaintiff appears to have applied them in its Infringement Contentions, then certain prior art discloses those claim elements to the same extent. The prior art references, actions, knowledge, and/or prior inventions may alternatively or cumulatively disclose the same claim element if the claim elements are applied differently than in Plaintiff's Infringement Contentions.

B. P.R. 3-3(b) – Illustrative Motivations to Combine

As is reflected in Exhibit 1, each prior art reference, action, knowledge, and/or prior invention identified in the Prior Art Invalidity Charts in Exhibits A-MMM for an Asserted Patent may be combined with the other prior art references, actions, knowledge, and/or prior inventions therein or with the other prior art references identified in the Invalidity Chart in Exhibits A-MMM to render obvious the Asserted Claims in combination. Prior art

disclosures also may be combined with information known to persons skilled in the art at the time of the alleged invention, and understood and supplemented in view of the common sense of persons skilled in the art at the time of the alleged invention.

The prior art to the '443 Patent is all related to methods for detecting item status and replenishing the item. The prior art to the '983, '918, and '798 Patents is related to compression and decompression of signals as well as monitoring of item status. One of ordinary skill in the art would understand these references to all be part of the same field of technology for each respective patent-in-suit and would naturally look to their teachings to find answers to the problems inherent in the respective technologies. Many utilize the same communication protocols and equipment. Many are in the same sub-field (*e.g.*, security/alarm systems or set-top boxes). Some were developed, disclosed, made, invented, etc. by the same business (*e.g.*, Alarm.com developed the Prior Art Alarm.com System, published the Alarm.com website available to the public prior August 10, 2005, and personnel there invented the Saylor '090 prior art patent which is assigned to Alarm.com). The U.S. Patent and Trademark Office considered many of these references to belong to the same or similar technology classifications.

The United States Supreme Court has clarified the standard for what types of inventions are patentable. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727. In particular, the Supreme Court emphasized that inventions arising from ordinary innovation, ordinary skill, or common sense should not be patentable. *Id.* at 1732, 1738, 1742-43, 1746. In that regard, a patent claim may be obvious if the combination of elements was obvious to try or there existed at the time of the invention a known problem for which there was an obvious solution encompassed by the patent's claims. In addition, when a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the

same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability.

Because the alleged inventions claimed in the Asserted Claims of the Asserted Patents simply arrange old elements with each performing the same function it had been known to perform and yield no more than what one would expect from such an arrangement, the combination is obvious. Further, in the prior art, there were well-recognized design needs and desires and market pressures to develop the features claimed in the Asserted Claims. Such factors provided ample reason to combine the prior art elements. *KSR*, 127 S. Ct. at 1742. Moreover, among the known predictable solutions, a person of ordinary skill in the art had good reason to pursue the known options. *Id.* The identified prior art references merely use those familiar elements for their primary or well-known purposes in a manner well within the ordinary level of skill in the art. Accordingly, common sense and knowledge of the prior art render the claims invalid under either § 102 or § 103.

Moreover, a person of ordinary skill would have been motivated to combine the identified prior art based on the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art. The identified prior art references, actions, knowledge, and/or prior inventions for each Asserted Patent, including portions cited in the Prior Art Invalidity Charts at Exhibits A-MMM, address the same or similar technical issues and suggest the same or similar solutions to those issues alleged to be addressed by the Asserted Claims. Many of the prior art references likewise have overlapping prior art authors or inventors, as well as overlapping assignees, industries, and companies and individuals involved in developing industry standards.

Below are only a few additional examples of the prior art items that one of ordinary skill in the art would consider to be part of the same body of work and in the same technical

field and is not meant to be limiting. Accordingly, a person of ordinary skill in the art at the time of filing of the Asserted Patents would be motivated to combine elements of any of the items of prior art identified herein and recognize that the combination of any of these references is a predictable use of elements known in the art to solve a known problem and a use of known techniques to solve a known problem in the same way. Defendants may rely on expert testimony to establish that the asserted claims of the Asserted Patents are invalid for obviousness.

Defendants incorporate by reference herein the motivations described by David B. Johnson in his June 2, 2017 Expert Report on Invalidity in *Virginia Innovation Sciences, Inc. v. Amazon.com, Inc.*, No. 1:16-CV-00861 (EDVA), as well as the motivations described by Kevin C. Almerath, including those provided in the instituted *inter partes* reviews in Case Nos. IPR2017-00870, IPR2017-00871, IPR2017-00872, IPR2017-00873, IPR2017-00874, IPR2017-00875, IPR2017-00876, IPR2017-00877, IPR2017-00878, and IPR2017-00879, all of which are incorporated herein by reference). Defendants will further specify the motivations to combine the prior art, including through reliance on expert testimony, at the appropriate later stage of this lawsuit.

Subject to the foregoing, and to the extent required to provide additional evidence of motivations to combine, Defendants identify the following additional exemplary reasons that skilled artisans would have been motivated to combine elements of the prior art to render the Asserted Claims of the Asserted Patents obvious. To the extent any cited prior art reference, action, knowledge, and/or prior invention is not found to disclose one of the elements discussed below, it would have been obvious to combine that reference, action, knowledge, and/or prior invention with other cited references, actions, knowledge, and/or prior inventions that disclose that element, at least for the reasons identified below.

Motivation to combine any of these prior art references, actions, knowledge, and/or prior inventions with other prior art, including the knowledge of one skilled in the art, generally exists within the references or other evidence of prior art themselves as well as within the knowledge of one skilled in the art in the relevant time frame. These prior art references or other evidence of prior art identify and address the same technical issues and suggest similar solutions to those issues. The prior art references, actions, knowledge, and/or prior inventions for each Asserted Patent are directed to the same or similar fields and are directed to solving the same or similar problems such that one of ordinary skill in the art would have been motivated to consider the techniques and systems disclosed or involved in those items of prior art and to combine them to arrive at the alleged inventions in the Asserted Claims.

The features and functionality disclosed or involved in these prior art references, actions, knowledge, and/or prior inventions would have been understood to describe the limited number of identified solutions that would have been useful in conjunction with other references to provide the known benefits associated with those features and functions and would have been known to have been feasible to achieve those predictable results. The combination of these items of prior art only combines old elements without change to their respective functions to arrive at the alleged inventions in the Asserted Claims. The motivation to combine may be found explicitly or implicitly in the references or other evidence themselves, or in the prior art considered as a whole as understood through the knowledge of one skilled in the art in the relevant timeframe.

Defendants hereby incorporate by reference the statements and reasoning set forth by the Examiner during prosecution of the Asserted Patents and applications related thereto as to why it would have been obvious to modify or combine references to achieve the

limitations of the Asserted Claims.

In some instances, multiple prior art publications discuss the same underlying system, software, or other project. For example, some patents and published patent applications reflect commercial products or services offered, sold and/or known in the market. It would have been obvious to consider and combine the teachings of a publication, patent or patent application that relates to a certain product or service with the features of that product or service as known and/or provided commercially. Similarly, where multiple publications discuss the same underlying product, service, standard, or project, it was obvious to combine the discussions and disclosures of the publications as they would be understood to describe features or potential features of the underlying subject matter. Further, where one publication discusses another publication or standard, it was obvious to consider and combine the teachings of each publication in combination with each other.

Each of the purported features of the systems described and claimed in the '983 Patent was available in prior art, individually and in combination, prior to both (i) the June 19, 2017 filing date of the '983 Patent and (ii) the purported Aug. 10, 2006 priority date or the provisional application filed February 2, 2007, and was well known to those of ordinary skill in the art. Furthermore, each of the specific limitations in the Asserted Claims of the '983 Patent are disclosed in the prior art identified Exhibit 1 and in the other Exhibits to these Invalidity Contentions, and it would have been obvious to combine the various features included in the prior art systems and methods with no change in their respective functions with nothing more than predictable results.

To the extent particular prior art in Exhibit 1 is not found to disclose or involve a claimed feature, the claimed feature would have been obvious for at least the following reasons, in addition to the reasons set forth herein.

All elements of the Asserted Claims are disclosed in the prior art with no change in their respective functions, and the combination would have yielded nothing more than predictable results.

The benefits and desirability of providing hub-based communication systems were well known to those of ordinary skill in the art before the purported Aug. 10, 2006 priority date of the Asserted Claims and the provisional application filed February 2, 2007. For example, U.S. Patent No. 5,126,719 describes a remotely armed alarm system that communicates wirelessly with a remote control unit. The disclosed system includes a wireless motion activated sensor that can be transported inside a briefcase. Upon detection of movement of the briefcase, an alarm is sounded. Another example of a movement detection and alarm system is provided in U.S. Patent No. 5,565,844, which describes an infrared motion sensor that transmits a wireless signal to a base station when motion is detected. Upon receipt of the wireless signal, the base station sounds an alarm, provides a visual indication of the alarm event, and communicates with a remote monitoring station or a local police department. The system is moveable and adjustable so that the sensors can detect movement in any desired portion of a monitored space. Yet another example of a wireless, security system is disclosed in N. Maes, "Safe and Secure: New Wireless Security System have Reduced Prices to a Level that, by Comparison, is a Steal," <http://www.chicagotribune.com>, June 2, 1989 ("Maes"). The wireless security systems described by Ms. Maes were sold as do-it-yourself kits that included wireless sensors attached to doors and windows with double-stick tape or screws and a system controller that plugs into the wall. Such systems offered the benefit of a low-cost, reliable solution for the average homeowners and apartment dwellers.

Yet another example of a wireless security system are the systems prepared by

Guardian Protection Services or a predecessor thereof in the 1980s and 1990s for temporary use in various locations by law enforcement agencies. Guardian prepared these transportable systems by modifying First Alert Model FA168, FA148, and FA120 control panels and keypads, *e.g.*, by adding handles, electrical plugs, batteries, phone jacks, and “cell jack” cellular communicators, etc. These wireless security systems designed for temporary use were paired with Ademco 5600 and/or 5700 Series wireless door and window contact sensors, and/or with wireless Ademco passive infrared motion detectors, and loaned and/or sold to police departments for use where there was a need to set up a security system for a short time.

Prior art systems like those Plaintiff asserts infringes asserted claims were known and used by others, disclosed, and offered for sale before the alleged priority date of the '983 Patent. For example, Honeywell was and is a pioneer in the home security business that knew of, used, disclosed, and offered for sale numerous systems, products, and services that were predecessors for accused products and services, as well as other prior art systems, products, services, and components. Such prior art systems and products include the LynxR-I Security System (“LynxR-I”), LynxR-EN Security System (“LynxR-EN”), the Vista-128BP Security System (“Vista-128BP”), the ADEMCO Optiflex Video Controller, and the Symphony / Symphony-i Advanced User Interface, AlarmNet communications technology and services, communications modules including the 7845C, 7845GSM, and 7845i series modules, the 5800 series wireless sensors, and other wireless components. Honeywell designed, developed, invented, made, used, advertised, published, and also offered for sale and/or sold to its customers these systems via at least its website, public press articles, sales materials, technical and support documents, customer presentations, and promotional videos at least as early as June 2004 for Vista-128BP, May 2004 for LynxR-EN, and March 2006

for LynxR-I, 2004 for Optiflex, 2002 and 2004 for Symphony, 2002 and before for AlarmNet and 7845 communications modules. In 2005 and 2006, for example Honeywell published the Honeywell Security & Custom Electronics Sourcebook, which describes these security systems and the control panels, communication devices, cameras, sensors, software, services, and subsystems offered for sale by Honeywell, as well as how the products, systems, and components could be combined. Resideo has produced the aforementioned documents, along with other related documents describing these technologies, their implementation, their disclosure, and their combinations, pursuant to P.R. 3-4(b).

These prior art systems, products, and components disclosed and embodied functionality identical to that accused of infringement in this case. The LynxR-I, LynxR-EN, and Vista-128BP were configured to communicate, through network communication channels, information for the status of multiple sensors, items, and locations, including 5800 series sensors like those accused here. Many diverse communication modules could be incorporated for use with these systems to provide various communication channels. These included the 7845C/7845CV2 Control Channel Cellular Subscriber Transceivers, 7845i/7845i-ENT Internet Communicators, 7845GSM/7845i-GSM GSM Cellular/Internet Communicators, 7820/7835C ECP Long Range Radios, and 7720/7720ULF/7920SE Long Range Radios, among others known, used, disclosed, offered for sale, and sold. (See e.g., 2005 and 2006 Sourcebooks and Honeywell security websites, white papers, advertisements, and other publicly available documents produced by Resideo.)

As can be seen from notices from the Federal Communication Commission and other public sources, moreover, it was known before the alleged priority date/s of the asserted claims that digital communications (including digital communications via GSM and the internet) would replace analog communications (including analog cellular communications),

including because the FCC had long announced a “sunset” of the analog channel, which ultimately took place in 2008, and which industry had already begun preparing for, announcing, offering, and disclosing replacement communications modules for already deployed systems alongside such modules already offered for new systems. In 2006, for example, Honeywell released documents and a video describing this transition, and disclosed a rebate program for replacement of 7845C/7845CV2 transceivers with, e.g., 7845GSM and 7845i-GSM modules.

Systems such as the LynxR-I, LynxR-EN, Vista-128BP, and Optiflex systems to be connected to the AlarmNet-A, AlarmNet-M, AlarmNet-C, and AlarmNet-I Services. These systems allowed for encrypted and unencrypted status updates from wireless sensors to user devices located at a central station. A user at the central station could then manage the item status of these devices, for example by turning off an alarm or resetting a sensor. Additionally, at least the LynxR-I and LynxR-EN had two-way voice functionality, through which a user at the central station could communicate by speaking to a person at the central hub through the use of a speaker and microphone embedded in the hub. Encrypted information could also be downloaded from the hub through the use of these services with the use of the Honeywell VISTA Navigator and Compass Downloader.

Additionally, LynxR-I, LynxR-EN, and Vista-128BP through use with the 4285/4286 VIP Module, TeleSMART, and VA8201 Alpha Pager Module could be configured to send status updates to users through the phone and pager networks. As cell phones were widely known at the time, a person of ordinary skill in the art would understand that such updates could be sent to a cell phone. The LynxR-I and LynxR-EN also had speakerphone functionality, which allowed them to be configured to receive a phone call directed to a user of the wireless hub system. Further, at least the LynxR-I and LynxR-EN allowed for the

recording of custom voice messages, with the ability to configure the system to play these messages at the hub or to be sent to a user's device through a network communication channel upon the receipt of a updated status. See also, e.g., the Vista-128BP used in conjunction with 5842 Wireless Dialer and 6160V Talking Alpha Display Keypad.

The LynxR-I, LynxR-EN, and Vista-128BP through use of a 5881ENHC or 5881 RF Receiver connected to 5800 Series Transmitters/Sensors as well as other means of communications. It was disclosed and/or obvious to a person of ordinary skill in the art to combine these systems with other available wireless network protocols generally known at the time, such as GSM, CDMA, Bluetooth, Z-Wave, and IEEE 802.11 Wi-Fi standards. These systems were also able to connect with a variety of other sensors, such as wired sensors and X10 Powerline Carrier Devices. Additionally, Vista-128BP through the use of a VistaKey module, was able to use key cards to receive RFID short range wireless status signals.

The Vista-128BP, with use of a 8132/8132-i/8142/8142-i Symphony Advanced User Interface and the Optiflex Video Controller, was able to receive video from a connected video camera based on a detected status change by a connected wireless sensor. This video, compressed in the JPEG format, could be decompressed by a decoder at the Hub and displayed at the Hub's control panel. Additionally, this video could be transmitted over the internet to any user device that had web-functionality, such as laptop computers, PDAs, and cell phones.

In addition to the Sourcebook, Honeywell's website, and other publicly available documents demonstrating the operation of such security systems and ability to combine diverse components to customize such systems, Honeywell also made sales presentations, such as to ADT, Time Warner, and Rogers that demonstrated such systems. Honeywell also

had been granted dozens of patents that disclosed the functionality of these products, as well as other security systems technologies--all of which predate the alleged priority dates here. Such patents include: US 2004/0123149, 7,042,350, 6,999,562, 7,292,142, 7,403,598, 7,113,099, 4,754,261; 5,004,999; 5,121,407; 5,155,469; 5,241,562; 5,311,542; 5,748,079; 5,801,626; 5,822,373; 5,828,300; 5,936,544; 6,026,165; 6,084,522; 6,087,933; 6,137,402; 6,150,936; 6,167,137; 6,201,472; 6,208,694; 6,236,313; 6,252,501; 6,255,944; 6,288,639; 6,294,992; 6,326,880; 6,351,214; 6,445,291; 6,445,292; 6,462,652; 6,472,993; 6,593,850; 6,603,387; 6,619,055; 6,690,276; 6,691,172; 6,724,316; 6,727,816; 6,798,342; 6,804,169; 6,810,307; 6,868,493; 6,901,066; 6,911,874; 6,930,604; 6,952,165; 6,987,450; 6,999,562; 7,010,421; 7,015,789; 7,027,416; 7,030,752; 7,081,813; 7,119,681; 7,120,795; 7,129,842; 7,116,221; 7,096,001; 7,081,827; 6,243,010; 6,229,997; 6,028,513; 6,963,280; 7,142,111; and 4,603,325.

One of ordinary skill would readily combine aspects of such prior art systems and products, including with other disclosures by Honeywell (the same prior artist/s), such as those in the patents listed above, as well as the known communications and signal processing standards.

It would have been obvious to apply the teachings and knowledge related to known hub-based communication systems in any of these references or prior art activities to any of the cited prior art which also relates to hub-based communication systems.

For example, use of a camera to provide image information upon detection of an intrusion event was well known prior to the filing of the '983 Patent and provided known benefits of transferring image information for security and alarm verification purposes. Prior art, such as the Script '078 Patent (to which the Script '909 patent claims priority), acknowledges that such information gathering devices were well known and discloses an

example of a readily available device referred to as the “Xcam2™ video camera kit available at the www.X10.com Internet website” that could wirelessly transmit image information. ’078 Patent, 10:57-61.

Script ’078 Patent also acknowledges that it was well known in the art well before the alleged August 2006 priority date of the Asserted Claims of the ’983 Patent to provide a device that wirelessly receives, processes, and then transmits the image information to a remote host or local computer. For example, the Script ’078 Patent discloses that “The XRay Vision Internet Kit™ available at the aforementioned www.X10.com Internet website is one product that can be used to implement the remote notification device 92A according to the instant embodiment. This product includes an integrated RF receiver and USB converter to capture and manage images received from the X10™ wireless video camera referred to above. Software that is provided with the product is adapted to forward the received images to any suitable remote network host, either in real time if the remote host is so equipped, or via e-mail.” ’078 Patent, 11:29-39.

Such an approach provides information about detected motion to a remote location, such as a law enforcement or other security agency, so that an appropriate response can be undertaken. ’078 Patent at 3:6-8. The benefits of the approach include a more robust, dynamic and secure means for wirelessly communicating system and item status information to outside agencies in order to enhance security.

These benefits were well known to those of skill in the art prior to the at the earliest possible priority date of the Asserted Claims of the ’983 Patent, as evidenced by the numerous references that disclose the claimed features. As just one example, in 1992, P.J. Shuttleworth published an article describing an experiment centered on “the electronic security industry, in particular the remote monitoring of alarm signals.” P.J. Shuttleworth,

“The Contribution of Remote Monitoring to the Development of IBC,” IEEE Electronics & Communications Engineering Journal, Vol. 4, Issue 6, pp. 401-404, December 1992 (discussing known benefits of visual verification in a remote monitoring system where images of a scene are captured by a camera in an electronic data collection unit and compressed before being transmitted to a monitoring station) (“Shuttleworth”). Dr. Shuttleworth noted that “[t]he false alarm situation in the security industry is a major problem which requires immediate attention.” *Id.* at 404. Due to the many false emergency calls generated by many alarm systems, “the response to police to such calls is in some cases being limited.” *Id.* at 401. To solve this problem, Dr. Shuttleworth wrote that visual verification of an alarm indication would be the best option and that such verification could be accomplished by sending real-time images to the remote monitoring center. *Id.* at 402. Thus, incorporation of cameras, including digital cameras, to wirelessly provide information associated with movement for transmission to a remote location represented an application of a known technique to a known system that was ready for improvement. Indeed, making such a combination or modification would amount to a simple matter of design choice and would yield predictable results.

Further exemplary references that teach the concept of a hub-based communication system that gathers information about an item status (*e.g.*, relative to movement of an object) and that provides the information for wireless transmission to a remote location and reflect the benefits thereof, are listed in Exhibit 2.

Indeed, the applicants for the '983 Patent admitted that claimed features of the Asserted Claims were known before the filing of the '983 Patent or purported priority dates. The specification of the '983 Patent admits that various standards described in the specification were prior art, as described in Applicant Admitted Prior Art. These include but

are not limited to known wireless standards such as IEEE 802.11, the 3G and 4G cellular standards, the Zigbee standard, the Bluetooth standard, other UWB standards, the Spread Spectrum standard, RFID standards, and Near Field Communication (NFC) standards. These also include known access mechanisms such as the TDMA, CDMA, or FDMA standards, and known encoding/decoding standards including MP3, MPEG-1, MPEG-2, and MPEG-4 standards. The specification also identifies admitted commercial off the shelf technology, including but not limited to the Diamond Stealth S60, ASUS V9400-X, or RADEON 7000 video cards. Further, the specification acknowledges the use of home computers, televisions, MP3, PDAs, cellular phones or various hybrid devices as user devices, and access to information from the Internet such as video on demand, video conferences, databases, etc.

As another example, regarding creating, storing, and transmitting a unique identifier associated with, *e.g.*, a sensor, To the extent prior art in Exhibits A-MMM is not found to disclose the concept of creating, storing, and/or transmitting a unique identifier associated with a sensor, the claimed features would have been obvious for at least the following reasons, in addition to the reasons set forth in Exhibits A-MMM.

The Background section of the prior art Script '909 Patent discloses the desirability of providing specific information to identify the object whose motion has been detected in the event that the alarm system is implemented to detect motion at multiple locations (*e.g.*, doors, windows) within a large security area (*e.g.*, a residence, an office or otherwise). Script '909 Patent, 2:19-26.

The problem of identifying the object whose motion has been detected in a security system with detectors dispersed at multiple locations was well known at the time of the purported invention. The storage and use of unique identifiers associated with a sensor to identify the moved object was one of a limited number of known solutions to this

problem. For example, the use of unique identifiers to indicate movement of an object has been implemented in small radio frequency transponders implanted in livestock and pets, car keys, tags attached to antiques and works of art and other easily moveable valuable assets (e.g., laptop computers), vehicles, and people. *See, e.g.*, M.M. Ollivier, RFID – A New Solution Technology for Security Problems, European Convention on Security and Detection, 16-18 May 1995, Conference Publication No. 408, 234-238 (IEE 1995).

Further teachings related to the storage and use of unique identifiers associated with sensors to identify movement of an object are identified in the enclosed prior art charts at Exhibits A-MMM. Yet further exemplary prior art that teaches this concept is identified in the chart at Exhibit 2.

The prior art relied upon by defendants includes prior art encompassing multi-device control systems, such as “smart” home systems, that flexibly integrated any number of consumer electronics to enable intercommunication or interoperability. For such systems, it would have been obvious to one of ordinary skill in the art to integrate, combine, and otherwise modify various devices for use in such systems, as well as flexibly implement specific functions and interoperability as part of a common field of technology.

For example, Arling discloses a “home control and automation system and method,” which Arling explains “generally includes one or more wireless remote controls, a plurality of appliances (including network enabled appliances and traditional legacy appliances in the exemplary system), associated control centric devices, and associated content centric devices.” Arling at Abstract. To this end, one of ordinary skill in the art would have found it obvious to combine any of the prior art references disclosed in other invalidity claim charts prepared in this case as a simple substitution of known elements to obtain no more than their predictable results. Arling discloses the use of appliances such as “televisions, VCRs, DVRs,

DVD players, cable converter boxes, amplifiers, CD players, game consoles, home lighting, drapery, fans, HVAC systems, thermostats, personal computers, security systems, network enabled automobiles, etc.” *Id.* at 2:61-66. The “functional modules” for the “various system elements defined and described [in Arling]” are “capable of implementation individually or collectively in a single physical device or a software module,” and control “may also be fully incorporated into any of the appliances of the home environment as a functional element.” *Id.* at 3:26-35.

As such, it would have been obvious to one of ordinary skill the art to substitute or combine Arling with the disclosure of such devices and interoperability functions as disclosed in one or more of security or monitoring systems related art, such as Naidoo, Zhang, Menard, Heaton, Foodman, Choi, Severson, Yukawa, Patrick, Home Minder, PAAS, and others; television, DVR and other media content display and distribution related art, such as Jefferey, Hanks, Kuhn, Salmonsens, Sarkijarvi, Srivastava, Atarashi and others; Personal Digital Assistant, Mobile Phone, and other hand-held devices art, such as Akama, and others; and other electronic household devices and appliances, such as Lindsay, Sone, Larson ‘462, and others, as well as any AAPA as no more than a simple substitution of known elements or combination of prior art elements according to known methods to yield no more than their predictable results and commonly understood benefits. Such devices and their integration would have fallen within the field of technologies contemplated to be integrated into the home control and automation to which Arling was directed.

Similarly, Krzyzanowski is directed to a “control server, or similar central processor, [that] manages the distribution of data (including audio and video), voice, and control signals among a plurality of devices connected via a wired and/or wireless communications network.” Krzyzanowski at Abstract. To this end, one of ordinary skill in the art would have

found it obvious to combine any of the prior art references disclosed in other invalidity claim charts prepared in this case as a simple substitution of known elements to obtain no more than their predicable results and commonly understood benefits. Krzyzanowski contemplates the integration of devices such as “communications equipment (Such as, telephones, intercoms, etc.), entertainment Systems (Such as, televisions, CD/DVD players, gaming applications, stereos, etc.), monitoring Systems (such as, Security cameras, baby monitors, etc.), security systems (Such as, fire alarms, sprinkler Systems, locks on doors or windows, etc.), personal computers (Such as, desktops, notebooks, notepads, personal digital assistants, etc.), cooking appliances (Such as, Ovens, coffee makers, electrical food/beverage warmers, etc.), comfort systems (such as, heating and air conditioning, humidifiers, dehumidifiers, air purifiers, light Switches, light dimmers, etc.), or the like” and services such as “video/audio serving, telephony, messaging, file sharing, internetworking, and security.” *Id.* at Abstract; 2:5-17. Krzyzanowski further contemplates that its disclosed controller could be included in “any platform that is small in physical size, has access to power lines for continuous and uninterrupted electrical power, and is physically located to facilitate transmission and reception of wireless signals,” that the control center could be “located within [a] portable controller,” disclosing such possibilities as integration into a “smoke detector, a wireless access point, or in a portable controller such as a “digital personal assistant, wireless notepad, etc.” *Id.* at 2:24-51.

As such, it would have been obvious to one of ordinary skill the art to substitute or combine Krzyzanowski with the disclosure of such devices and interoperability functions as disclosed in one or more of security or monitoring systems related art, such as Naidoo, Zhang, Menard, Heaton, Foodman, Choi, Severson, Yukawa, Patrick, Home Minder, PAAS, and others; television, DVR and other media content display and distribution related art, such

as Jefferey, Hanks, Kuhn, Salmonsens, Sarkijarvi, Srivastava, Atarashi and others; Personal Digital Assistant, Mobile Phone, and other hand-held devices art, such as Akama, and others; and other electronic household devices and appliances, such as Lindsay, Sone, Larson '462, and others, as well as any AIPA as no more than a simple substitution of known elements or combination of prior art elements according to known methods to yield no more than their predictable results and commonly understood benefits. Such devices and services and their integration into the system of Krzyzanowski or vice versa would have fallen within the field of technologies contemplated by Krzyzanowski.

Similarly, Zintel is directed to “dynamic connectivity among distributed devices and services, and more particularly relates to providing a capability to access device- or service-specific operational information and perform remote automation and control of embedded computing devices.” Zintel at Abstract. Recognizing the trend of a “world of ubiquitous and pervasive networked computing, where all types of devices are able to effortlessly and seamlessly interconnect and interact,” Zintel contemplates usage of its disclosed invention with devices such as “communications devices (e.g., telephones, cell phones, audio and video conferencing Systems, 2-way radios, etc.), office equipment (printers, fax machines, copiers, dictation, etc.), audio-video equipment (audio and Video recorders and players, including televisions, radio receivers, compact disk (CD), digital video disk (DVD), camcorders, etc.), entertainment devices (set top boxes, game consoles, etc.), environment control equipment (thermostats, heating/ventilation/air-conditioning equipment, light Switches, etc.), security systems, home appliances (coffee makers, dishwashers, clothes washer/ dryer), automobiles, public facilities equipment (signs, traffic signals, etc.), manufacturing equipment, and many others.” Zintel at 1:30-50; 45:25-47.

As such, it would have been obvious to one of ordinary skill the art to substitute or

combine Zintel with the disclosure of such devices and interoperability functions as disclosed in one or more of security or monitoring systems related art, such as Naidoo, Zhang, Menard, Heaton, Foodman, Choi, Severson, Yukawa, Patrick, Home Minder, PAAS, and others; television, DVR and other media content display and distribution related art, such as Jefferey, Hanko, Kuhn, Salmonsens, Sarkijarvi, Srivastava, Atarashi and others; Personal Digital Assistant, Mobile Phone, and other hand-held devices art, such as Akama, and others; and other electronic household devices and appliances, such as Lindsay, Sone, Larson ‘462, and others, as well as any AAPA as no more than a simple substitution of known elements or combination of prior art elements according to known methods to yield no more than their predictable results and commonly understood benefits. Such devices and services and their integration into the system of Zintel or vice versa would have fallen within the field of technologies contemplated by Zintel.

Similarly, Reisman is directed to “systems and methods for navigating hypermedia using multiple coordinated input/output device sets,” providing a user with content and interactive device use “across multiple independent systems.” Reisman at 0010. Reisman envisions “Homes, offices, and other personal environments of the future will have a rich array of computer-based input output devices of various kinds,” such as “TV devices and the range of PCs PDAs, tablets, and Internet appliances,” and discloses a system to “enable effective coordination” between a wide range of hardware and software, including systems for which such usage may not be a primary mission (including both new systems and legacy systems).” *Id.* at 0025-0027.

As such, it would have been obvious to one of ordinary skill the art to substitute or combine Reisman with the disclosure of such devices and interoperability functions as disclosed in one or more of security or monitoring systems related art, such as Naidoo,

Zhang, Menard, Heaton, Foodman, Choi, Severson, Yukawa, Patrick, Home Minder, PAAS, and others; television, DVR and other media content display and distribution related art, such as Jefferey, Hanco, Kuhn, Salmonsén, Sarkijärvi, Srivastava, Atarashi and others; Personal Digital Assistant, Mobile Phone, and other hand-held devices art, such as Akama, and others; and other electronic household devices and appliances, such as Lindsay, Sone, Larson '462, and others, as well as any AAPA as no more than a simple substitution of known elements or combination of prior art elements according to known methods to yield no more than their predictable results and commonly understood benefits. Such devices and services and their integration into the system of Reisman or vice versa would have fallen within the field of technologies contemplated by Reisman.

Similarly, Akatsu is directed to the “remote monitoring and control of device (nodes) in a network system including a gateway device bridging the network system to an external network,” with specific focus on using IEEE 1394 (FireWire) to implement communication and control of a plurality of devices in home entertainment systems, allowing any device on the IEEE 1394 bus [to] communicate with any other node,” allowing “the controller [to] reside in any node” 3:1-13. Akatsu contemplates connecting devices on such a network system such as a “compact disk (CD) player, digital-video disc (DVD) player, gaming Systems, surround sound audio systems, hand held video cameras, etc.” with the more general goal of “interoperability between home electronic devices.” *Id.* at 3:14-30.

As such, it would have been obvious to one of ordinary skill the art to substitute or combine Akatsu with the disclosure of such devices and interoperability functions as disclosed in one or more of security or monitoring systems related art, such as Naidoo, Zhang, Menard, Heaton, Foodman, Choi, Severson, Yukawa, Patrick, Home Minder, PAAS, and others; television, DVR and other media content display and distribution related art, such

as Jefferey, Hanco, Kuhn, Salmonsens, Sarkijarvi, Srivastava, Atarashi and others; Personal Digital Assistant, Mobile Phone, and other hand-held devices art, such as Akama, and others; and other electronic household devices and appliances, such as Lindsay, Sone, Larson '462, and others, as well as any AAPA as no more than a simple substitution of known elements or combination of prior art elements according to known methods to yield no more than their predictable results. Such devices and services and their integration into the system of Akatsu or vice versa would have fallen within the field of technologies contemplated by Akatsu.

Similarly, the HAL System is an implementation of a smart home system such as generally contemplated by, for example, Arling and Krzyzanowski. The HAL System operated to control and interconnect a vast array of devices, including security systems, lights, phones, cable service, satellite TV, thermostats, VCRs, coffee makers, popcorn poppers, home theatre systems, gas fireplaces, and other appliances, as well as provided personal audio and video content and access to internet content. Similarly, it would have been obvious to one of ordinary skill in the art to substitute or combine the HAL System with the disclosure of such devices and interoperability functions as disclosed in one or more of security or monitoring systems related art, such as Naidoo, Zhang, Menard, Heaton, Foodman, Choi, Severson, Yukawa, Patrick, Home Minder, PAAS, and others; television, DVR and other media content display and distribution related art, such as Jefferey, Hanco, Kuhn, Salmonsens, Sarkijarvi, Srivastava, Atarashi and others; Personal Digital Assistant, Mobile Phone, and other hand-held devices art, such as Akama, and others; and other electronic household devices and appliances, such as Lindsay, Sone, Larson '462, and others, as well as any AAPA as no more than a simple substitution of known elements or combination of prior art elements according to known methods to yield no more than their predictable results. Such devices and services and their integration into the HAL System or

vice versa would have fallen within the field of technologies contemplated by the HAL System.

Moreover, it would have been obvious to one of ordinary skill in the art to substitute or combine any one of Arling, Krzyzanowski, Zintel, Reisman, Akatsu, Intel Technology Journal, Microsoft or the HAL System, in whole or in part, as references disclosing modular functionalities and features of multi-device control systems, with one or more of the other multi-device control systems to achieve no more than predictable results and commonly understood benefits. For example, the HAL System could have been adapted to use the wireless protocols disclosed in each of Arling, Krzyzanowski, Zintel, Reisman, Akatsu, Intel Technology Journal, or Microsoft to achieve the benefits of wireless, as opposed to wired, connectivity, simply by replacing wired outputs with wireless interfaces, as disclosed in those references. Vice versa, the specific wireless capabilities disclosed in these references could have been replaced by wired connections to provide the benefits of wired connectivity, such as larger bandwidth and reduced power consumption. One of ordinary skill would have recognized the modularity and flexibility of the multi-device control systems disclosed in each of these references, as well as the independent benefit of various features and functionalities, and one of ordinary skill in the art would have been prompted to combine elements of these references in different variations based on design incentives or other market forces, as predictable to one of ordinary skill in the art.

Similarly, the Digital Living Network Alliance (“DLNA”), originally named the Digital Home Working Group (“DHWG”), was founded in June 2003 by PC and consumer electronics companies. Its purpose was to develop and promote a set of interoperability guidelines for sharing digital data, including media, among multiple devices. In June 2003, the DHWG published the Digital Home White Paper (INNOV00090409 - 90422). The

Digital Home White Paper describes “a vision of interoperable networked devices in the home that provide new value propositions and opportunities for consumers and product vendors.” INNOV00090412. The Digital Home White Paper describes the goal of providing “seamless interaction among Computer Electronics (CE), mobile, and Personal Computers (PC) devices.” *Id.* The Digital Home White Paper described providing “design guidelines that refer, as much as possible, to standards from established, open industry standards organizations,” which would “provide CE, mobile, and PC vendors with the information needed to build interoperable digital home platforms, devices, and applications.”

DLNA published the Home Networked Device Interoperability Guidelines v1.0 (“DLNA 1.0”) in 2004. (INNOV00096911-97010.) DLNA 1.0 “provides vendors with the information needed to build interoperable networked platforms and devices for the digital home.” INNOV00096912. DLNA 1.0 was “created in a unique cross-industry effort that combined the efforts of over 100 Consumer Electronics, PC-Industry, and Mobile Device companies from around the world who worked together with the aim of achieving the world’s first substantial platform for true interoperability between personal computer and consumer electronic device.” INNOV00096920. The “Key Technology Ingredients” included wireless connectivity standards such as Ethernet and 802.11 Media, networking including the IPv4 Suite, device and discovery control standards including UPnP Device Architecture v1.0, media management and control standards including UPnP AV 1.0, media transport standards including HTTP, as well as various required and optional media format profiles. Accordingly, it would have been obvious to a person of ordinary skill in the art to combine the disclosures of DLNA 1.0 with other standards in the industry, including but not limited to other wireless connectivity standards generally known at the time, such as Bluetooth, Z-Wave, 3G, 4G, CDMA, NFC and/or RFID standards, and other media formats

known in the art including MPEG-1, MPEG-2, and MPEG-4, including codecs for such media formats. Moreover, it would have been obvious to combine references described in Exhibits A-MMM with the disclosures of DLNA 1.0, at least because DLNA sought to provide interoperable networked platforms and devices for the digital home.

DLNA published the DLNA Networked Device Interoperability Guidelines, expanded March 2006, (“DLNA 2006”) (INNOV00091875 - 0092492) in March 2006. DLNA 2006 includes two volumes, describing “architecture protocols” and “media formats,” respectively. INNOV00091899. The guidelines in DLNA 2006 “are based on an architecture ... that defines interoperable components for devices and software infrastructure.” *Id.* “It covers physical media, network transports, device discovery and control, media management and control, media formats, and media transport protocols.” *Id.* The “Key Technology Ingredients” included wireless connectivity standards such as Ethernet, 802.11, and Bluetooth, networking including the IPv4 Suite, device and discovery control standards including UPnP Device Architecture v1.0, media management and control standards including UPnP AV 1.0 and UPnP Printer:1, media transport standards including HTTP and RTP, as well as various required and optional media format profiles. INNOV00091900. DLNA 2006 also incorporates 85 normative and informative standards. DLNA 2006 also describes a “DLNA media format model” that “is intended to achieve a baseline for network interoperability while encouraging continued innovation in media codec technology,” defining for each Device Category a “set of mandatory and optional media format profiles for each of the three classes of media: imaging, audio, and AV.” INNOV00091933. Accordingly, it would have been obvious to a person of ordinary skill in the art to combine the disclosures of DLNA 1.0 with other standards in the industry, including but not limited to other wireless connectivity standards generally known at the

time, such as Bluetooth, Z-Wave, 3G, 4G, CDMA, NFC and/or RFID standards, and other media formats known in the art including MPEG-1, MPEG-2, and MPEG-4, including codecs for such media formats. Moreover, it would have been obvious to combine references described in Exhibits A-MMM with the disclosures of DLNA 2006, at least because DLNA sought to provide interoperable networked platforms and devices for the digital home.

These prior art publications disclosed functionality identical to that accused of infringement in this case. Further, it would have been obvious to combine the disclosures of one or more of the Digital Home White Paper or DLNA 1.0 with DLNA 2006, as well as with any other publications by DLNA, standards or normative or informative references identified in any other prior art DLNA materials, or other known standards in the art.

As such, it would have been obvious to one of ordinary skill in the art to substitute or combine DLNA 1.0 and/or DLNA 2006 with the disclosure of such devices and interoperability functions as disclosed in one or more of security or monitoring systems related art, such as Naidoo, Zhang, Menard, Heaton, Foodman, Choi, Severson, Yukawa, Patrick, Home Minder, PAAS, and others; television, DVR and other media content display and distribution related art, such as Jefferey, Hanks, Kuhn, Salmonsens, Sarkijarvi, Srivastava, Atarashi and others; Personal Digital Assistant, Mobile Phone, and other handheld devices art, such as Akama, and others; and other electronic household devices and appliances, such as Lindsay, Sone, Larson '462, and others, as well as any AAPA as no more than a simple substitution of known elements or combination of prior art elements according to known methods to yield no more than their predictable results. Such devices and services and their integration into the system of Akatsu or vice versa would have fallen within the field of technologies contemplated by Akatsu.

Several of the prior art references are directed to inventory management systems.

These references describe systems that detect and manage a change in item status, and purchase additional items in response to a change in item status. For example, Hansen, Linton and Pires each describe systems for monitoring an item status. Pires describes a system for monitoring the wetness of a diaper. When a sensor is detected as wet, the system determines the status of the item has been updated. Linton is also directed to a system for detecting the status of the item. Hansen describes a wireless point of sale system, which determines a distance to a customer device and performs purchases of additional items, such as diapers, based on the customer's previous purchases and needs. In Linton, the system utilizes sensors to determine whether a micro-warehouse door has been opened and the inventory of the products has been reduced. When inventory in the micro-warehouse runs low, an order for additional inventory is initiated. It would have been obvious for a person of ordinary skill to have combined one or more of Linton, Hansen, and Pires. Each are directed to detection of updated item status. Combining Linton and Hansen, for example, would enable a user to both detect when a diaper is wet and order additional diapers automatically when the diaper is wet. Such a combination would have been obvious to try and yields predictable results.

VI. P.R. 3-3(D) – SECTION 112 INVALIDITY

Asserted Claims are invalid under 35 U.S.C. § 112 as noted below. Asserted Claims noted below (and those depending therefrom) lack a written description and enabling disclosure commensurate with the alleged scope of the claims, are un-duly vague and indefinite, and contain purely functional language. The Asserted Patents, read in light of their specifications and prosecution histories, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention. *See Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014). The Asserted Patents do not enable one of skill in the art

to practice the full scope of the inventions claimed without undue experimentation. The Asserted Patents do not enable one of skill in the art to practice the scope of the inventions set forth in Plaintiff's Disclosures Pursuant to Local P.R. 3-1 and 3-2.

The Asserted Patents provide insufficient guidance on aspects Plaintiff now asserts to be part of the purported inventions. Specifically, in its Disclosures Pursuant to Local P.R. 3-1 and 3-2, Plaintiff applied the patent claims so broadly that they lack a corresponding disclosure in the patent specification and are different from what is disclosed in the Asserted Patents. Based on Plaintiff's broad application of the claims and its claim construction proposals advanced in prior litigations, there is a zone of uncertainty concerning the breadth and meaning of the claim terms, as explained further below, that creates such intractable and insoluble ambiguity in those terms that one of ordinary skill in the art is unable to discern the scope of the claims with reasonable certainty.

The following identification of claims/claim elements are only exemplary and Defendants reserve the right to supplement the identification of claims and claim elements that do not comply with the requirements of 35 U.S.C. § 112, including in response to any proposed claim constructions put forward by Plaintiff. Specifically, to the extent an element identified below, or its variation, appears in claims other than the ones specified below, it also renders those additional claims invalid under 35 U.S.C. § 112. Claims that depend on these additional claims and on the claims identified below are also invalid under 35 U.S.C. § 112. Defendants reserve the right to identify additional claims and claim elements that do not comply with the requirements of 35 U.S.C. § 112 after the Court construes the claims.

At least the following claims are invalid for failing to meet the requirements of 35 U.S.C. § 112:

Claim Element	Patent (Claims)	§ 112 Ground
"wireless HUB system" / "wireless	'918 patent (33,	Indefinite and lack of

Claim Element	Patent (Claims)	§ 112 Ground
hub,” “centralized HUB system,” “management center system,” “management system”	114, 122, and 128); ’983 Patent (22, 62, and 117)	written description under 35 U.S.C. § 112.
“wherein the wireless [transmission] channel is a Zigbee channel”	’983 patent, (34, 125)	Indefinite and lacks written description under 35 U.S.C. § 112.
“wherein the short range wireless communication is a Zigbee communication”	’918 patent (30, 40, 97, 113)	Indefinite and lacks written description under 35 U.S.C. § 112.
Entire claim	’983 patent (110, 117), ’918 patent (122)	Indefinite under 35 U.S.C. § 112 as claim a mixed system and method.
“perform a conversion of the multimedia signal”	’983 patent (1, 22, 52, 57, 62, 99, 101 and 139)	Lack of written description under 35 U.S.C. § 112.
“perform a conversion of a corresponding signal of the particular information content to accommodate production of the particular information content”	’918 patent (33, 114, 122, and 128)	Lack of written description under 35 U.S.C. § 112.
“a corresponding signal of the particular information content”	’918 patent (135)	Indefinite under 35 U.S.C. § 112.
“particular information content”	’918 patent (116)	Indefinite under 35 U.S.C. § 112.
“multimedia information content”	’798 patent (3)	Indefinite under 35 U.S.C. § 112.
“information related with the household inventory”	’443 patent (29)	Indefinite under 35 U.S.C. § 112.
“an indication of an updated status of an item”	’983 patent (110)	Indefinite under 35 U.S.C. § 112.
“wherein the wireless HUB system is configured to perform a conversion of the wireless signal to accommodate production of a corresponding information content”	’983 patent (22, 62)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the wireless HUB system is further configured to communicate, through the network communication channel, information for managing an item status of an item in connection with a short range wireless communication regarding an updated status of the item”	’983 patent (22)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“the wireless HUB system is further	’983 patent	Governed by pre-AIA §

Claim Element	Patent (Claims)	§ 112 Ground
configured to communicate a video from a video camera to a user's terminal at least in part through a cellular network"	(25)	112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
"wherein the wireless HUB system is configured to notify a user about the updated status according to a configuration setting"	'983 patent (24)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
"wherein the wireless HUB system is configured to communicate information designated for a user of the wireless HUB system through a cellular network"	'983 patent (45, 82)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
"wherein the wireless HUB system is configured to receive an instruction of making a call to a cellular phone and communicate a data from the cellular phone to accommodate the phone call"	'983 patent (49)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
"wherein the wireless HUB system further comprises a buffer configured to accommodate an adequate buffering and processing rate in support of real time production of the corresponding information content on the high definition digital television"	'983 patent (68)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
"wherein the wireless HUB system is configured to communicate information designated for a user of the wireless HUB system through a cellular network and via a Wifi access point"	'983 patent (82)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
"wherein the management center system is configured to communicate a phone call with the first mobile terminal, a data from the first mobile terminal and from a cellular network being converted to a converted data for transmission through the WiFi network"	'983 patent (86)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
"wherein the management center system is configured to transmit the converted data through the WiFi network to accommodate the phone call"	'983 patent (86)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
"wherein the management center system is configured to communicate a video from a video camera to a user's	'983 patent (90)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for

Claim Element	Patent (Claims)	§ 112 Ground
terminal through a cellular network”		failure to disclose corresponding structure.
“wherein the management center system is configured to convert the signal for transmission according to a network transmission protocol”	’983 patent (91)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management center system is configured to transmit the signal for the production of the information content on a display screen of a home or office appliance”	’983 patent (92)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management center system is configured to transmit the signal in connection with recognition of an identifier registered in the mapping table and corresponding to a communication of the information content for the production on the digital television”	’983 patent (93)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management center system is configured to facilitate a phone call communication through a public switched telephone network (PSTN) via an access point of the WiFi network”	’983 patent (98)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management center system is configured to route a communication between an IP address associated with the WiFi network and a phone number of the first mobile terminal”	’983 patent (100)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management center system is further configured to communicate information for managing an item status of an item based on a wireless signal regarding an updated status of the item”	’983 patent (103)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein management center system of claim is further configured to encrypt the information for the managing the item status for communication”	’983 patent (107)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management center system is configured to communicate information about an updated status of an item in association with a short	’983 patent (108)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose

Claim Element	Patent (Claims)	§ 112 Ground
range wireless communication regarding the updated status”		corresponding structure.
“a transmitter configured to transmit, through a wireless transmission channel, a signal in connection with an initiation of a replenishment of an inventory of an item, the signal being transmitted through the wireless transmission channel in response to an indication of an updated status of the item, the signal comprising information corresponding to a unique identifier of the wireless device, information about the inventory of the item being stored in a database, a requirement of the item being included in the information about the inventory of the item”	’983 patent (110)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the wireless HUB system is configured to receive a signal from the item status sensing device”	’983 patent (117)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the wireless HUB system is further configured to identify the item in connection with recognition of the information corresponding to the unique identifier”	’983 patent (117)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the wireless HUB system is further configured to communicate, through the network communication channel, information about the updated status to a user device associated with the item”	’983 patent (117)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the wireless HUB system is configured to notify a user of the updated status update according to a configuration setting”	’983 patent (117)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the central controller is further configured to identify the item in connection with recognition of the information corresponding to the unique identifier”	’983 patent (128)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the central controller is further configured to communicate, through the network communication channel, merchant information relevant	’983 patent (128)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose

Claim Element	Patent (Claims)	§ 112 Ground
to the replenishment of the inventory of the item in connection with the updated status, the network communication channel being separate from the wireless transmission channel established for the transmission of the signal”		corresponding structure.
“wherein the central controller is further configured to communicate shipping information to accommodate the replenishment of the inventory of the item in connection with the updated status”	’983 patent (128)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the central controller is configured to notify a user of the updated status according to a configuration setting”	’983 patent (135)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the centralized HUB system is configured to perform a conversion of a multimedia signal corresponding to the information content to accommodate the production of the information content on the high definition digital display, the multimedia signal comprising a compressed signal”	’983 patent (139)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“at least one processing unit configured to perform a conversion of the multimedia signal, wherein the conversion of the multimedia signal comprises decompressing, by a decoder, the compressed digital video signal to a decompressed signal”	’918 patent (9)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the mobile terminal is configured to transmit the encoded signal to the destination device through a predetermined communication channel in conjunction with a navigational command for the predetermined communication channel”	’918 patent (9)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the wireless signal conversion apparatus is configured to: communicate information about an updated status of the household item in conjunction with a short range wireless communication regarding the updated status”	’918 patent (26)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.

Claim Element	Patent (Claims)	§ 112 Ground
“wherein wireless signal conversion apparatus is configured to: communicate, through the wireless communication network, information about an updated status of the household item in conjunction with a short range wireless communication regarding the updated status’	’918 patent (27)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the wireless hub is configured to send a data package to the management center system through a wireless communication network based on the request for the particular information content, the data package including information for the unique hub identifier”	’918 patent (33, 116, 122, 128, 135)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein, in connection with recognition, by the system, of information for the unique identifier for the household item associated with the short range wireless communication, the system is configured to update the household item status information for the household item corresponding to the updated status of the household item”	’918 patent (33)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management center system is configured to perform a processing of the request for the multimedia information content in association with transmission of the multimedia information content to the digital television through a high definition multimedia interface”	’918 patent (37, 118, 135)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management system is further configured to search a content server for the multimedia information content in conjunction with processing of the request for the multimedia information content”	’918 patent (38, 119)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management center system is further configured to route the multimedia information content to accommodate the production by the digital television”	’918 patent (38, 119)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management center system is further configured to route the particular information content	’918 patent (46)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for

Claim Element	Patent (Claims)	§ 112 Ground
according to the network address”		failure to disclose corresponding structure.
“wherein the content server is configured to: monitor the request for the particular information content”	’918 patent (48, 98)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the content server is configured to refresh stored information contents based on an updated monitoring of the request”	’918 patent (49)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the system is further configured to send a notification regarding the household item status to the cellular phone associated with the user account”	’918 patent (52)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein system is configured to receive a response to the notification from the cellular phone and send an instruction based on the response to accommodate a change of the household item status”	’918 patent (53)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management center system is configured to perform a processing of the purchase request based on an authentication of the user in connection with recognition of the unique hub identifier registered at the at least one mapping table”	’918 patent (56, 117, 122)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the system further comprises a signal conversion unit configured to receive the multimedia information content and convert a corresponding signal of the multimedia information content to accommodate the production of the multimedia information content by the digital television”	’918 patent (58, 120, 124, 128, 136)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the signal conversion unit is configured to decompress the compressed video signal to a decompressed video signal”	’918 patent (58, 120, 124, 128, 136)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the signal conversion unit is configured to encode the decompressed video signal to produce an encoded signal for transmission to the digital	’918 patent (58, 120, 124, 128, 136)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose

Claim Element	Patent (Claims)	§ 112 Ground
television through a digital output interface, the encoded signal comprising a decompressed digital video signal”		corresponding structure.
“configured to send promotion information to the user account in association with the updated status”	’918 patent (72)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the system is configured to send the commercial incentive information to the user account based at least in part on a relevance of the commercial incentive information with the particular information content requested”	’918 patent (84)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the wireless hub is configured to collect usage information”	’918 patent (85)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the wireless hub is further configured to communicate a request for changing the household item status and a confirmation for changing the household item status”	’918 patent (87)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the system is further configured to send a notification regarding the household item status to a user terminal associated with the user account”	’918 patent (90)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein system is configured to receive a response to the notification from the user terminal and send an instruction based on the response to accommodate a change of the household item status”	’918 patent (91)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the system is configured to perform a security process or an error correction on the particular information content”	’918 patent (93)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the system is configured to perform a virus screening on the particular information content”	’918 patent (94)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.

Claim Element	Patent (Claims)	§ 112 Ground
“wherein the management center system is configured to route the particular information content from a particular content server that is logically approximate to the wireless hub”	’918 patent (95)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management center system is further configured to search a content server for the particular information content in conjunction with the processing of the data package”	’918 patent (98)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the content server is configured to: monitor the request for the particular information content; store the particular information content that is determined to be locally applicable based upon monitoring of the request”	’918 patent (48, 98)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the content server is further configured to refresh stored information contents based on an updated monitoring of the request”	’918 patent (98)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the wireless hub is configured to receive the particular information content through the wireless communication network in connection with identification of the wireless hub”	’918 patent (116)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the wireless hub is configured to perform a conversion of a corresponding signal of the particular information content to accommodate production of the particular information content”	’918 patent (33, 116, 122, 128, 135)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management center system is further configured to search a content server for the multimedia information content in conjunction with the processing of the request for the multimedia information content”	’918 patent (38, 119)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the wireless hub is configured to receive the particular information content through the wireless communication network in connection with identification, by the management center system, of the wireless hub”	’918 patent (33, 122)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.

Claim Element	Patent (Claims)	§ 112 Ground
“wherein the wireless hub is further configured to communicate information about an updated status of a household item in conjunction with a short range wireless communication regarding the updated status”	’918 patent (122)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“centralized hub system configured to: receive, through a wireless communication network, an information content requested by a user in connection with identification of the centralized hub system based on recognition of the unique hub identifier, the information content carried by a compressed digital video signal”	’798 patent (1)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the centralized hub system is further configured to communicate the information through the WLAN for said managing the household item status”	’798 patent (2)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the centralized hub system is further configured to receive information about a user’s request for a multimedia information content for production by a digital television”	’798 patent (3)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management system is configured to perform a processing of the user’s request for the multimedia information content in association with transmission of the multimedia information content to the digital television through a high definition multimedia interface (HDMI) for said production”	’798 patent (3)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management system is further configured to route the multimedia information content to accommodate said production by the digital television”	’798 patent (4)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management system further comprises a software configured to provide a data package from a cellular phone in initiating communications with a management center system that are directed to destination devices, the software being	’798 patent (8)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.

Claim Element	Patent (Claims)	§ 112 Ground
configured for installation on the cellular phone; and wherein the centralized hub system is one of the destination devices”		
“wherein the management system is further configured to search a content server for the [multimedia] information content”	’798 patent (4, 10)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management system is configured to perform a processing of the purchase request based on authentication of the user”	’798 patent (14)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management system is further configured to route data between a digital television and a cellular phone”	’798 patent (32)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein management system is configured to receive and transmit a video content from a video camera”	’798 patent (33)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management system is configured to send the commercial incentive information to the user based at least in part on a relevance of the commercial incentive information with the information content requested”	’798 patent (40)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the centralized hub system is configured to collect usage information”	’798 patent (43)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the centralized hub system is further configured to communicate the information for managing the household item status to a 911 center”	’798 patent (45)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management system is further configured to send a notification regarding the updated status to a user terminal”	’798 patent (50)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management system is configured to notify a user of the	’798 patent (52)	Governed by pre-AIA § 112, para. 6. Indefinite

Claim Element	Patent (Claims)	§ 112 Ground
updated status according to a configuration setting”		under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management system is configured to notify a user of the update status according to a configuration setting”	’798 patent (53)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management system is configured to perform a security process or an error correction on the information content”	’798 patent (54)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management system is configured to refresh stored information contents based on an updated monitoring of the request”	’798 patent (57)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the management system is configured to route the information content from a content server that is logically approximate to the user of the centralized hub system”	’798 patent (58)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the centralized hub system is configured to receive a phone call through a cellular base station, the phone call being directed to a user of the centralized hub system”	’798 patent (63)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the centralized hub system is configured to receive an instruction of making a call to a cellular phone and communicate a data from the cellular phone to accommodate the phone call”	’798 patent (64)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the centralized hub system is further configured to transmit the encoded decompressed digital video signal to the high definition digital television through a predetermined communication channel in conjunction with a navigational command for the predetermined communication channel, the predetermined communication channel being the high definition digital output interface connected to the cable”	’798 patent (81)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the centralized hub system is further configured to communicate information for managing an item status	’798 patent (81)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for

Claim Element	Patent (Claims)	§ 112 Ground
of an item based on a signal regarding an update status of the item, the signal being triggered by a detection of the updated status”		failure to disclose corresponding structure.
“wherein the centralized hub system is further configured to communicate the information for managing the household item status to a cellular phone”	’798 patent (83)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the centralized hub system further comprises a software configured to provide a data package from a cellular phone in initiating communications with a management center system that are directed to destination devices, the software being configured for installation on the cellular phone”	’798 patent (95)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the centralized hub system is configured to perform a processing of the purchase request based on authentication of the user”	’798 patent (97)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wireless transmitter configured to transmit, through a wireless transmission channel, an item status signal in connection with an initiation of an increase of a household inventory of an item, the wireless transmission channel being established for transmission of the item status signal in a local wireless communication network in response to an indication of an updated status of the item”	’443 patent (1)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the memory is configured to store a unique identifier for the item and information related with the household inventory of the item, the information related with the household inventory of the item including a purchase requirement of the item”	’443 patent (1)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the central controller is configured to receive information regarding the item status signal and identify the item in connection with a successful transmission of the item status signal from the wireless	’443 patent (1)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.

Claim Element	Patent (Claims)	§ 112 Ground
transmitter”		
“wherein the central controller is further configured to identify the item is based on recognition of the unique identifier of the item stored in the memory”	’443 patent (1)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the central controller is further configured to perform a processing of a purchase request for the item to increase the household inventory of the item in connection with identification of the item”	’443 patent (1)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the central controller is further configured to communicate information for the processing of the purchase request through a network communication channel to complete the processing of the purchase request, the network communication channel being separate from the wireless transmission channel established for the transmission of the item status signal”	’443 patent (1)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the central controller is configured to send confirmation information regarding the processing of the purchase request”	’443 patent (1)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the system is further configured to determine a location for the item based on information of the wireless transmission channel established in the local wireless communication network for the transmission of the item status signal”	’443 patent (2)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the system is configured to send merchant information relevant to a need to replenish the household inventory of the item”	’443 patent (6, 17)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the system is configured to determine the need based on the information regarding the item status signal in connection with performing the processing of the purchase request for the item”	’443 patent (6, 17)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the system is configured to recognize the wireless transmitter based	’443 patent (7)	Governed by pre-AIA § 112, para. 6. Indefinite

Claim Element	Patent (Claims)	§ 112 Ground
on information of the wireless transmission channel established in the local wireless communication network for the transmission of the item status signal”		under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the system is configured to notify a merchant of the need”	’443 patent (8)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the system is further configured to determine a need to replenish the household inventory of the item based on the information regarding the item status signal in connection with the processing of the purchase request for the item”	’443 patent (9)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the system is further configured to notify a merchant of the need”	’443 patent (10)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the system is configured to recognize the wireless transmitter based on information of the wireless transmission channel established for the transmission of the item status signal in the local wireless communication network”	’443 patent (15, 18)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“configured to notify a commercial entity of a need to replenish the household inventory of the item based upon the information regarding the item status signal”	’443 patent (27)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“wherein the system is configured to determine a location of the wireless transmitter based on a use of a wireless location technique”	’443 patent (28)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.
“a memory configured to store program code that includes instructions executable by said processor, said instructions comprising: instructions for transmitting, through a wireless transmission channel, an item status signal in connection with an initiation of an	’443 patent (29)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.

Claim Element	Patent (Claims)	§ 112 Ground
<p>increase of a household inventory of an item, the item status signal being transmitted through</p> <p style="padding-left: 40px;">the wireless transmission channel in a local wireless communication network based on an indication of an updated status of the item, information related with the household inventory of the item being stored in a database, a purchase requirement of the item being included in the information related with the household inventory of the item;</p> <p style="padding-left: 40px;">wherein the unique identifier corresponding to the wireless device is recognized in connection with a successful transmission of the item status signal;</p> <p style="padding-left: 40px;">wherein a purchase request for the item is processed to replenish the household inventory based on recognition of the unique identifier;</p> <p style="padding-left: 40px;">wherein information of a user account is communicated through a network communication channel to accommodate a processing of the purchase request for the item, the information of the user account comprising payment information for the purchase request;</p> <p style="padding-left: 40px;">wherein the wireless transmission channel established for the transmission of the item status signal is separate from the network communication channel;</p> <p style="padding-left: 40px;">wherein the item is associated with the wireless device; and</p> <p style="padding-left: 40px;">wherein the wireless device is designated to transmit the item status signal”</p>		
<p>“wherein the wireless device is configured to confirm the successful transmission of the item status signal”</p>	<p>’443 patent (35)</p>	<p>Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.</p>
<p>“wherein the wireless device is configured to receive configuration</p>	<p>’443 patent (36)</p>	<p>Governed by pre-AIA § 112, para. 6. Indefinite</p>

Claim Element	Patent (Claims)	§ 112 Ground
setting information related with the transmission of the item status signal”		under pre-AIA § 112 for failure to disclose corresponding structure.
<p>“a memory, the memory storing program code executable by the processor to perform operations comprising:</p> <p>receiving, through a wireless communication network, a multimedia signal, the multimedia signal comprising a compressed digital video signal;</p> <p>converting the multimedia signal to produce a converted multimedia signal for production by a destination device; and</p> <p>transmitting the converted multimedia signal to the destination device through a predetermined communication channel in conjunction with a navigational command for the predetermined communication channel, the predetermined communication channel comprising a high definition digital output interface,</p> <p>wherein the converting comprises decompressing the compressed digital video signal to a decompressed signal;</p> <p>wherein the converting further comprises encoding the decompressed signal to an encoded signal for transmission through the predetermined communication channel;</p> <p>wherein the converted multimedia signal comprises the encoded signal; and</p> <p>wherein the destination device is a digital television”</p>	'918 patent (99)	Governed by pre-AIA § 112, para. 6. Indefinite under pre-AIA § 112 for failure to disclose corresponding structure.

Additionally, there are at least two independent Asserted Claims in the '983 Patent (Claims 22 and 62) that require “a decoder,” and numerous dependent Asserted Claims depend from these two claims. All discussions of a “decoder” in the '983 Patent's

specification are common with the specification earlier, related '492 Patent that Plaintiff has explicitly disclaimed the ability to rely upon for any purpose in these proceedings.

Because any possible written description support and enablement for the “decoder” element are only found in the portion of the specification of the '983 Patent that overlaps with the '492 Patent, they are not and cannot be “specification disclosure[s] relied [on] by the asserted claims of the '983 in [the] current case.” Without being able to rely upon those sections of the specification of the '983 Patent that overlap with the '492 Patent, Defendants contend there is no written description support and no enablement for the claimed “decoder” element, and so claims 22, 62, and all Asserted Claims depending therefrom are therefore invalid under § 112.

In addition to the § 112 arguments discussed with respect to the priority dates of the Asserted Claims and other issues (including 112(6)) above, Defendants will provide a more detailed basis for Defendants' indefiniteness, enablement and/or written description defenses to be set forth in Defendants' claim construction materials and/or expert reports on invalidity, to be served in accordance with the Court's Docket Control Order. Defendants have not yet taken any depositions related to these issues. Defendants specifically reserve the right to amend and/or supplement these Invalidity Contentions based on a failure to comply with the requirements of 35 U.S.C. § 112.

VII. SECTION 101 INVALIDITY

In addition to the grounds identified above, Amazon hereby provides notice to VIS that the asserted claims of the patents-in-suit do not comply with the requirements of 35 U.S.C. § 101 and are therefore invalid. Claims that are directed to an abstract idea and whose elements do not add some inventive concept are ineligible for patenting. *See Alice Corp. v. CLS Bank Int'l*, 134 S. Ct. 2347 (2014); *Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335

(Fed. Cir. 2018); *Affinity Labs of Texas, LLC v. Amazon.com, Inc.*, 838 F.3d 1266 (Fed. Cir. 2016).

35 U.S.C. § 101 states that a patent may be granted to “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” Whether or not an invention is eligible for patent protection under § 101 is a “threshold test.” *See Bilski v. Kappos*, 130 S. Ct. 3218, 3225 (2010). Under this “threshold test,” the court “must first determine whether the claims at issue are directed to a patent-ineligible concept,” such as an abstract idea. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014). If so, the court must then “consider the elements of each claim both individually and “as an ordered combination” to determine whether the additional elements “transform the nature of the claim” into a patent-eligible application.” *Id.* (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1297 (2012)). Where the additional elements are “‘well-understood, routine, conventional activit[ies]’ previously known to the industry,” the claim is not patent-eligible. *Alice*, 134 S. Ct. at 2359 (quoting *Mayo*, 132 S. Ct. at 1294).

The asserted claims of the ’983 Patent are invalid under Section 101, because they are directed to non-statutory subject matter.

The claims of the ’983 and ’918 patents are indistinguishable for § 101 purposes from those held invalid in *Virginia Innovation Scis. Inc. v. Amazon.com, Inc.*, 227 F. Supp. 3d 582, 586 (E.D. Va. 2017), *aff’d sub nom. Virginia Innovation Scis., Inc. v. HTC Corp.*, 718 F. App’x 988 (Fed. Cir. 2018). They are directed to the abstract idea of reproducing a video from a wireless device on a separate display device and they add nothing inventive to that idea. The ’798 patent adds to that idea some token postsolution steps for sending and receiving data. Such steps are “not even arguably inventive.” *buySAFE, Inc. v. Google, Inc.*,

765 F.3d 1350, 1355 (Fed. Cir. 2014); *see Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1242 (Fed. Cir. 2016). Its claims, too, are ineligible for patenting.

Finally, the claims of the '443 patent are directed to the abstract idea of remotely ordering a product using a dedicated requesting device. Its claims, like those of the other patents, consist of functionally described components like a “memory ... configured to store” and a “transmitter ... designated to transmit.” '443 patent at 13:41-14:23. And those steps add only routine data processing, sending and receiving, and other conventional activity—not anything inventive. *See Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1355-56 (Fed. Cir. 2016). These claims are thus also invalid.

VIII. ADDITIONAL PRIOR ART

In addition to the prior art charted, Defendants list in Exhibit 2, which is incorporated herein in its entirety, additional prior art references that disclose or describe the general state of the art and knowledge of one skilled in the art at the time of the purported inventions and the filings of the patents-in-suit. These references may be used to show the state of the art and/or may be used as supporting references in an obviousness combination depending on how the asserted claims are ultimately construed by the Court.

Defendants also incorporate herein by reference, whether or not cited in Exhibit 2 or any other Exhibit hereto, all prior art cited in the Asserted Patents and all prior art cited in the prosecution histories of the Asserted Patents, applications related thereto, reexaminations, *inter partes* or covered business method patent review proceedings, and any foreign counterparts.

IX. ACCOMPANYING DOCUMENT PRODUCTION

Pursuant to P.R. 3-4(b), and subject to the Court's Orders, Defendants have produced and/or made available for inspection and copying a copy of each item of prior

art identified pursuant to P.R. 3-3(a) which does not appear in the file history of the patent at issue. These prior art references are cited in and support the accompanying invalidity charts. Defendants have separately made or are concurrently making their productions of documents pursuant to P.R. 3-4(a) to Plaintiff.

X. TABLE OF EXHIBITS

Exhibit(s) Identifier	Description
1	Tables of Combinable Prior Art
2	Prior Art Reflecting the General State of the Art
A	Chart(s) for Applicant Admitted Prior Art
B	Chart(s) for Brailean
C	Chart(s) for Naidoo
D	Chart(s) for ADEMCO Optiflex Video Controller using Symphony
E	Chart(s) for Saylor
F	Chart(s) for Yukawa
G	Chart(s) for Zhang
H	Chart(s) for Honeywell Lynx R-EN System
I	Chart(s) for Honeywell Lynx R-I System
J	Chart(s) for Honeywell Vista System 128BP
K	Chart(s) for Honeywell Security & Custom Electronics Sourcebook 2006
L	Chart(s) for Honeywell 8142-I Symphony Advanced User Interface
M	Chart(s) for Tyroler
N	Chart(s) for Patrick
O	Chart(s) for Menard
P	Chart(s) for Atarashi
Q	Chart(s) for Chun
R	Chart(s) for Fernandez
S	Chart(s) for Fischer
T	Chart(s) for Hanko
U	Chart(s) for Hardacker
V	Chart(s) for Heaton
W	Chart(s) for Jeffrey
X	Chart(s) for Kuhn
Y	Chart(s) for Lindsay
Z	Chart(s) for Oldenborgh
AA	Chart(s) for Salmonsens
BB	Chart(s) for Sarkijarvi
CC	Chart(s) for Shannon
DD	Chart(s) for Sone
EE	Chart(s) for Srivastava

Exhibit(s) Identifier	Description
FF	Chart(s) for Arling
GG	Chart(s) for Kryzanowski
HH	Chart(s) for Zintel
II	Chart(s) for Akatsu
JJ	Chart(s) for Nam
KK	Chart(s) for Reisman
LL	Chart(s) for Monroe '601
MM	Chart(s) for Script
NN	Chart(s) for HAL System
OO	Chart(s) for Linton '276
PP	Chart(s) for Larson '462
QQ	Chart(s) for Przygoda '607
RR	Chart(s) for Reitkerk '083
SS	Chart(s) for Fansa '804
TT	Chart(s) for Monroe '183
UU	Chart(s) for Foodman '220
VV	Chart(s) for Choi '979
WW	Chart(s) for Hicks (pub '326)
XX	Chart(s) for Karaoguz (pub '329)
YY	Chart(s) for Kariya (pub '248)
ZZ	Chart(s) for Koat (pub '299)
AAA	Chart(s) for Laksono (pub '707)
BBB	Chart(s) for Marshall (pub '521)
CCC	Chart(s) for Yamaga (pub '818)
DDD	Chart(s) for Hansen (pub '517)
EEE	Chart(s) for Pires (pub '859)
FFF	Chart(s) for Johnson (pub '999)
GGG	Chart(s) for Nagaoku (pub '112)
HHH	Chart(s) for HomeMinder
III	Chart(s) for Microsoft
JJJ	Chart(s) for Samsung
KKK	Chart(s) for Prior Art <u>Alarm.com</u> System ("PAAS")
LLL	Chart(s) for Akama
MMM	Chart(s) for DLNA 2006

Dated: April 17, 2019

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the above and foregoing document has been served on April 17, 2019, to all counsel of record who are deemed to have consented to electronic service via the Court's CM/ECF system per Local Rule CV-5(a)(3).

/s/ Dargaye Churnet

Dargaye Churnet